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Capturing Downstream Value from the Service Market
An early-phase case study of how a product-centered firm can
generate revenues from the service market

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Abstract

This study was conducted for a Swedish company in a technology-intensive industry. The industry of the case company has recently gone through a major technological transition, which the case company was the driving force behind. By pioneering a new technology and building a strong ecosystem of partners, they have been able to achieve a double-digit growth for the past decade and are currently the market leader in the industry. Their products are, however, facing commoditization, ultimately resulting in increased competition and lowered margins. As a result of this issue the case company's desire, and the purpose of this study, is to investigate services that provide potential for capturing a share of the downstream value in the industry.

The aim is to identify and evaluate services that show potential for the case company to capture value from, assess the current position of the case company, and investigate possibilities for how the case company should approach the service market.

A qualitative approach was taken in order to investigate the subject and answer the research questons. The work was divided into three different phases, and data was collected through 35 internal and external interviews, both open and semi-structured. This data was complemented by a document review comprising both internal and public case company documents.

It was found that the case company's immediate efforts in order to generate revenues from the service market should be on improving the services that their partners in the ecosystem offer. This should be done by providing value-adding tools in form of software, aiming to enhance seven of the identified services, in which the case company can utilize their superior technological knowledge. The reason for this approach is that the case company is currently not in a position where they can risk disrupting their partner relations, as these are an integral part of their success.

Recommendations for what measures the case company should take in order to be able to increase their share of the downstream value is also provided. First of all, they should strengthen their position service actor. This should be done by developing their service department and foster and nurture a service-oriented culture. It is also suggested that the case company challenge their business model and take measures towards strengthening their brand among the end customers. Finally, two possible options for how the case company can achieve a larger part of the service markets revenues were proposed.

Keywords: *Service offering, downstream value, servitization, business ecosystem, partner network.*

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Contents

1 Introduction

This section gives a brief introduction to the study. First a background of the research subject and the case company is given, before explaining the specific problem formulation. Then the purpose of the study is outlined, followed by a description of the research questions and how these were broken down into investigation-specific questions. The section ends with a brief discussion of the delimitations of the study.

1.1 Background

One common problem that manufacturers experience is that the economic value has been pushed downstream in the value chain (Wise & Baumgartner, 1999). The value has been pushed away from the manufacturers' traditional activities, producing and selling goods, towards providing services to operate and maintain products. Successful manufacturing firms have moved beyond their production activities and integrated vertically towards the valuable economic activities that occur throughout the entire product life cycle. It is therefore interesting to perform a case study investigating the challenges that a producing firm faces in the pursuit of capturing more of the downstream value. The company studied in this case, hereby referred to as *the case company*, is facing a similar situation as their products are facing commoditization, which will ultimately result in increased industry competition and lower margins (Jovanovic & MacDonald, 1994). What makes the case company especially interesting to investigate is that their strong position in the industry has been enabled by building an ecosystem complementing their business, where the majority of the downstream value currently is captured by partners in the ecosystem. The ecosystem will be further presented in section *4.1 Business ecosystem*. The case company trying to capture part of the downstream value might therefore imply a disruption of partner relationships and thus harming their current position and reputation in the industry.

The case company is a company in a technology-intensive industry, researching and developing hardware products. It was founded in 1984 and has its headquarters located in Sweden (Case Company Homepage, 2014). Currently they have employees present in over 40 countries worldwide. The market shares are allocated so that the US stands for approximately 50% of their revenues, while the EMEA region stand for 37% and the remaining 13% resides in Asia (Case Company Annual Report, 2013). Their position as the market leader in the industry stems from being the main driver behind a technological shift, transforming a formerly conservative industry. This shift started in 1996 when the first product of this technology was launched and since then the technology has become more accepted in the industry. In recent years the adoption of this technology has increased rapidly and is being established as the new dominant design, resulting in a huge growth for the case company and ultimately in their position as the market leader. Their rapid growth and strong position have also been enabled by an indirect sales model and a large partner network on both the supply and distribution side, together with their technological leadership. Their distribution network is two-tiered in which the case company sell to distributors, which in turn serve resellers and system integrators with products.

Their current business and efforts comprises development and sales of state-of-the-art hardware products with complementing core software. Different from many other similar actors, they have outsourced a lot of the infrastructure products to other actors. This has resulted in that the company is able to focus their efforts on their core competencies, which are superior technological knowledge, extensive R&D and continuous innovation (Case Company Homepage, 2014). The case company reinvests 15% of their total profits in R&D, resulting in state-of-the-art technologies, design and superior product performance (Case company employee 1, 2014). These products have positioned them as a differentiated actor

and their products are among the most expensive options on the market. The hardware products are digital and possess attributes earlier unique in the market. However, the hardware products are becoming commoditized, which mean that the attributes are less unique and the case company is not able to compete to the same extent with the differentiation in performance provided by the products.

Their product-centered culture and technology-focused business have resulted in that the current revenue streams for the case company consist almost exclusively of hardware product sales. The case company is therefore now looking into how they can capture more of the downstream value by generating revenues from the service market.

1.2 Problem formulation

The main problem for the company is that their hardware products are facing commoditization and they are therefore facing decreasing margins and increased competition in their product sales. Hence, the company has acknowledged the need for additional revenue streams in order to continue their profitable growth and maintain their position as the market leader. They wish to investigate additional revenue streams mainly through an increased presence in the service market related to their products, aimed towards both partners in the business ecosystem and end customers. This contradicts their current business model, where they are exclusively generating revenues from product sales.

Such a vertical movement downstream in the value chain may be detrimental to the relationships with their partners, as capturing part of the downstream value intrudes on their partners' revenues. Additionally, the business model works as a barrier to efficient interaction with the end customers, as there are several actors operating between the case company and the end customers.

Therefore the main problem for the case company is how to capture more downstream value by generating revenues from the service market without disrupting the relationships with the partners in the ecosystem.

1.3 Research purpose and aim

Based on the case company's desire to capture downstream value from the service market, the purpose of this study is to investigate which services that provides potential for the case company to generate revenues from. The subject of the study is in an early phase at the case company, and the study is therefore regarded as an exploratory pre-study. The aim is to identify and evaluate services which the case company can capture value from, assess the current position of the case company in relation to the service market and investigate possibilities for how the case company should approach the service market. In addition to this, the study also aims at investigating and outlining which options that would allow the case company to capture a larger share of the downstream value from the service market in the future.

The recommendations and conclusions are a result of a thorough empirical investigation, analyzed through theoretical frameworks. The empirical data was gathered through interviews and supported by secondary data such as internal and external company and industry documents. The theoretical frameworks were chosen based on a thorough literature review, guided by relevant keywords. This has ensured a sufficient examination of the existing opportunities and possibilities in the industry, the internal challenges the company faces and how the partners in the ecosystem will respond to the case company attempting to capture downstream value through vertical integration.

To concretize, the final outcome consist of a short list of services and recommendations for to whom and how the case company should engage in these services. These recommendations answers vital questions as to why these are deemed as the most promising services, what actions that are needed in order to implement them, such as changes in the organizational structure and missing capabilities and when to implement them. As a result of this, the recommendations also answer which services are deemed as not feasible to generate revenues from. The recommendations also include the most promising options for how the case company can become a strong actor in the downstream market in the future.

From an academic perspective, this study aims to contribute to the existing literature regarding producing firms moving downstream in the value chain. As mentioned earlier, a challenge specific for the company in this case study is how to cope with potential disruptions of partner relationships, resulting from them capturing value currently captured by their partners.

1.4 Research questions

Three research questions were chosen based on the purpose of this study. They were chosen in order to address the three most important aspects of the study; how the case company can assist the ecosystem beyond what is done today, what the case company are capable of doing and how these actions will be perceived by the partners in the ecosystem. This was done in order to concretize the research purpose and make it more tangible and unambiguous. In turn, each of these research questions were broken down further, into investigation-specific questions to be answered throughout the data collection. This breakdown was done after the data collection in the first phase, comprising internal interviews and document reviews, to ensure that the questions were based on sound and actual empirical data. This breakdown is presented in *Table 1 Breakdown of research purpose*.

Table 1 Breakdown of research purpose

Research purpose	Research questions	Investigation-specific questions
Investigate how the case company can capture downstream value by generating revenues from the service market.	1. In what ways can the case company support end customers and partners in the business ecosystem beyond what is done today?	a) What services exist in the industry today? b) What problems related to services exist in the industry today? c) Are there any service needs currently not met in the industry? d) Are there any services performing badly? e) Are there any services that partners in the business ecosystem wish to eliminate?
	2. Is the case company capable of successfully offer services?	a) Does the case company possess the resources to offer the service? b) Does the case company possess the capabilities to offer the services? c) Does the case company possess the organizational structure to offer the services? d) Do the different service offerings fit with the overall business model and strategy? e) What does it take to cope with capabilities/resources/strategic fit not possessed by the case company?
	3. How will the introduction of services by the case company be perceived by the partners in the business ecosystem?	a) Does the case company intrude on the current revenue streams of the partners in the business ecosystem by introducing the service? b) Does the case company intrude on the future revenue streams of partners in the business ecosystem by introducing the service? c) Would vertical integration be perceived as a threat by partners in the business ecosystem?

1.5 Delimitations

Due to the scope of the study, there are three delimitations worth mentioning. These delimitations exclude certain case company products, markets and customer segments, but provide the study with focus and consistency.

First, the product portfolio of the company is relatively diverse and in the recent years the company has entered a new market, adding a different product category to their portfolio. This study focuses solely on the core products of the company and it does not concern the more recently launched product category of the company. This limitation was set after a request from the case company, as the new product is still in the commercialization phase.

Second, the company is globally present with offices of varying sizes on all continents, but their largest market is in the US. In this study the markets in Sweden and to a small extent Norway were investigated, which represents relatively small shares of their total market. The two markets were chosen because they provide a good possibility to gather data of high quality due to convenience, amount of accessible interview objects and elimination of language barriers. Also, they are very similar, but there are some minor differences that can

provide diversity to the study. However, it does put a geographical constraint to the study as the findings might differ between the targeted markets and the other markets the case company is present in.

Third, the potential customers for the case company's products can be roughly divided into three different segments; small, medium and enterprise. As the case company is a differentiated actor that offers high-end products, they are aiming mainly for the medium and enterprise markets. These segments entail end customers with systems that consist of 100-500 of the case company's products. This research has focused on these two segments that the case company currently aims for, and the small customer segment is therefore excluded, as a decision for entering the small segment has not been made in the case company yet.

2 Method

This section describes the method used in the study. First the general approach towards the research is elaborated upon, describing the orientation, design and working process of the study. After that the methods for data collection is described. Then the methods used for analyzing the data are discussed, before ending the section with a critical view regarding the quality of the research.

2.1 Research design and working process

As this research was initiated by the case company with the purpose to investigate which services that provides potential for the case company to generate revenues from, it is regarded as practice-oriented, with a strong qualitative character. This orientation differs from theory-orientation in the sense that a theory-oriented objective aims to contribute to theory development, while practice-oriented research aim to contribute to the knowledge of one or several practitioners (Holmén, 2013). Thus, a practice-oriented research objective tends to have a more qualitative element to it than a theory-oriented research objective (Bryman & Bell, 2011, p. 35).

For this study, the case study research design was chosen in order to guide the collection and analysis of data (Bryman & Bell, 2011, p. 40). This is because the subject of the study is in an early stage at the case company and the boundaries are somewhat ambiguous. Compared to other research designs such as experimental, quasi-experimental, longitudinal and cross functional, a case study provides better possibilities to probe deeper and examine the case in its real life context, where the boundaries of the context are unclear (Holmén, 2013). Thus, this design is the most suitable for the qualitative requirements that needs to be fulfilled in regards to the practice-oriented research objective.

As case studies are highly qualitative it was deemed appropriate to apply the main steps of qualitative research as put forward by Bryman and Bell (2011, p. 390), and presented in *Figure 1 Main steps of qualitative research*.
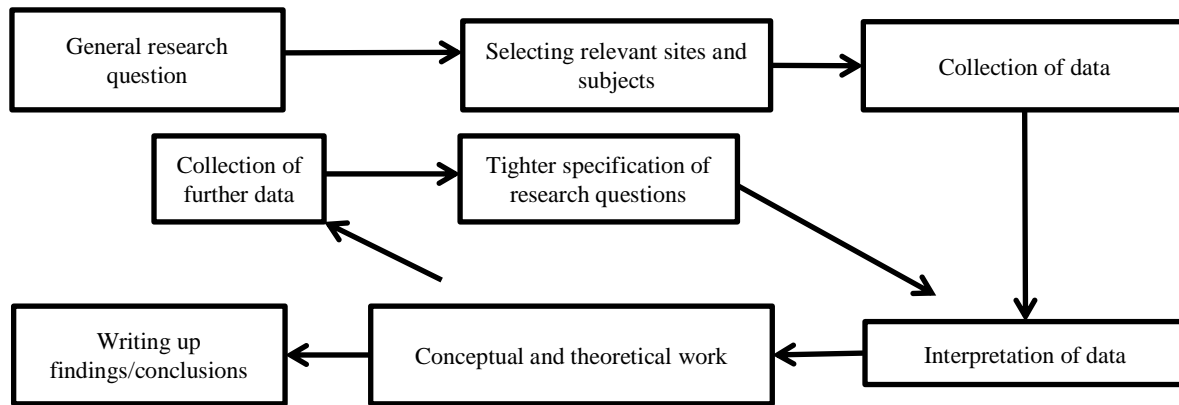
Figure 1 Main steps of qualitative research. Source: Bryman & Bell (2011, p. 390)

As for the first step, a general research question was provided by the case company which corresponded to the purpose of this study. The next steps, from selection of relevant sites and subjects to conceptual and theoretical work, were repeated in three different phases; exploration, identification and investigation. Each phase serves to answer each of the specific research questions. Even though these three phases were separated in order to facilitate for a more structured and unambiguous working process, the activities were carried out concurrently, as this approach ensures the possibility to make adaptions due to new information (Maylor, 2010, p. 114-115). The process is presented in *Figure 2 The research process – Activities.*
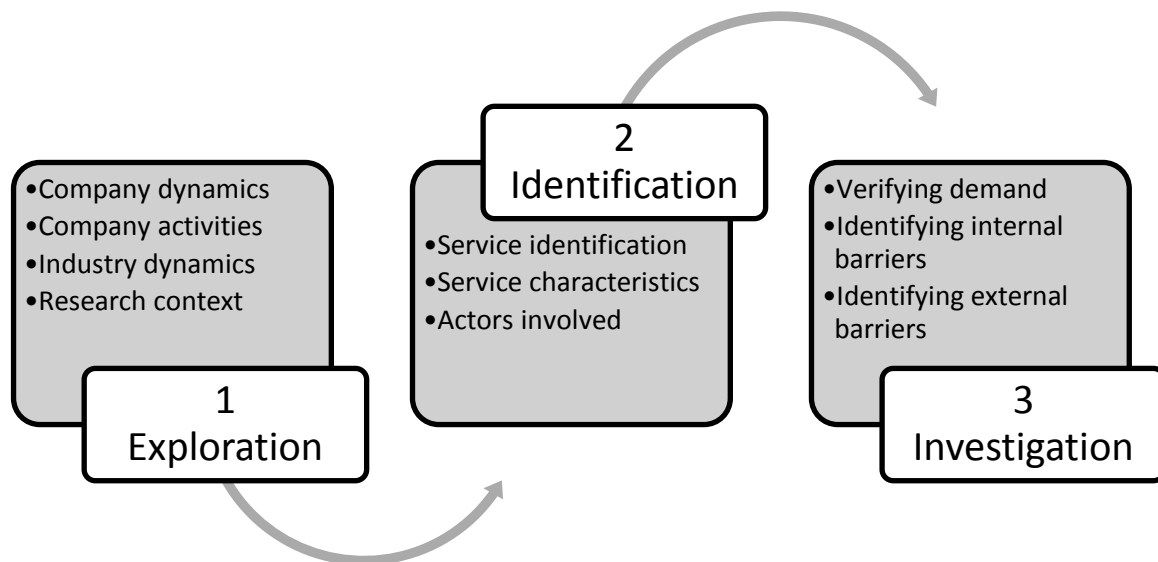
Figure 2 The research process - Activities

The first phase comprises the endeavors to gain a comprehensive understanding of the industry, the competitive environment, the business ecosystem and internal capabilities of the company. The main body of data in this phase stems from open and semi-structured interviews conducted with company employees, which were complemented with data from internal and public documents. During this phase the research purpose was broken down into the three research questions, which in turn were broken down into investigation-specific

questions. Grounding these questions on sound and context-specific data made them more tangible and accurate for the data collection in the following phases.

The second phase entails the mapping of the services in the industry, based on data from semi-structured interviews with partners, end customers and employees of the case company. This mapping went on until a saturation point was reached, when the data collection did not reveal any new information. This mapping also included an in-depth description of what activities a service consist of, together with a complete mapping of all the actors offering the different services and to whom. This mapping is presented in section *4.3 Services in the industry*. The final result of this phase was a complete list of all services in the industry.

The third phase consisted of a deeper investigation of the identified services in order to identify the most appropriate services that the company can capture value from. The data that was required for this investigation comprised information verifying the demand from both partners in the ecosystem and end customers, information regarding internal barriers such as the company's internal resources, capabilities and business model fit, and the most appropriate way of generating revenues from the different services. What was also required was information regarding how an increase in the case company's service offerings will be perceived by the partners in the ecosystem, as it risks disrupting the business ecosystem. The data was gathered through semi-structured interviews, both internal and external.

After finishing the last phase of the iterative collection of data and conceptual work, the last step of the model for qualitative research entails writing up the findings and finalizing the recommendations. More specifically, this comprised the development of recommendations for how the case company should approach the current service market in order to generate revenues, which steps that needs to be taken in order to be able to capture a larger share of the downstream value, as well as propositions for how the case company can become a strong actor in the service market in the future.

2.2 Data collection

As previously mentioned, the data collected in this study mainly stems from two different sources; interviews and document reviews. The main body of data stems from interviews, which is argued to be a suitable method for collecting data in qualitative research and case studies because it provides the possibility to probe deep and gather detailed data (Bryman & Bell, 2011, p. 465).

In the early phases of the data collection, open interviews were preferred as it was necessary to gain an understanding of the research context. Open interviews resembles a conversation with one or very few predetermined questions (Bryman & Bell 2011, p. 467). The goal is to gain a broad understanding of a relatively unknown subject, and open interviews were thus applied in the first phase of the data collection, when the goal was to develop an understanding of the case company and the industry it operates in. In the later phases, semi-structured interviews were preferred because the aim was to gather detailed and specific data. This type of interviews was applied when the aim was to identify or investigate the services in the industry. When conducting these interviews, a semi-standardized interview template were used, and customized depending on the interviewees.

In total, 35 interviews were conducted, 18 of them with employees at the case company and 17 of them with external industry actors. All of the internal interviews and four of the external interviews were held face to face, one external was carried out by e-mail correspondence, while the remaining twelve were conducted over phone. This was mainly because of difficulties due to geographical dispersion between the authors and the interviewees. The

interviews were conducted with one interviewer asking and probing, and one interviewer taking notes and supporting with follow-up questions. The time span for the interviews ranged from 30 to 60 minutes. Furthermore, all interviews were, with the interviewees consent, recorded and transcribed shortly after the interview. This way, all information was stored and made ready for analysis, thereby ensuring a high quality in the data (Bryman & Bell, 2011, p. 481-483).

In terms of whom to interview, a combination of two sampling approaches was used. First and foremost, convenience sampling was used, which is that interviewees were determined based on their accessibility for the authors (Bryman & Bell, 2010, p. 190). For the internal interviews this method proved to be efficient, due to high accessibility among case company employees.   For the external interviews, the accessibility was determined both after geography and on the network of contact persons that the case company provided. In addition to convenience sampling, the snowballing method was also applied, which is to ask interviewees if they can suggest any persons that might provide valuable input on the subject (Bryman & Bell, 2010, p. 192-193). This snowballing was done both for internal and external interviews. However, in order to ensure that interviewees possessed sufficient knowledge to contribute to this study, an initial background check of the possible interviewees' positions and companies were done in order to ensure that time was spent efficiently. An overview of the interviewees' occupation in the business ecosystem is presented in *Figure 3 Overview of interviewees*.

18 Internal interviews

• Case company employees

17 External interviews

• 8 End customers
• 7 System integrators
• 1 Reseller
• 1 Distributor
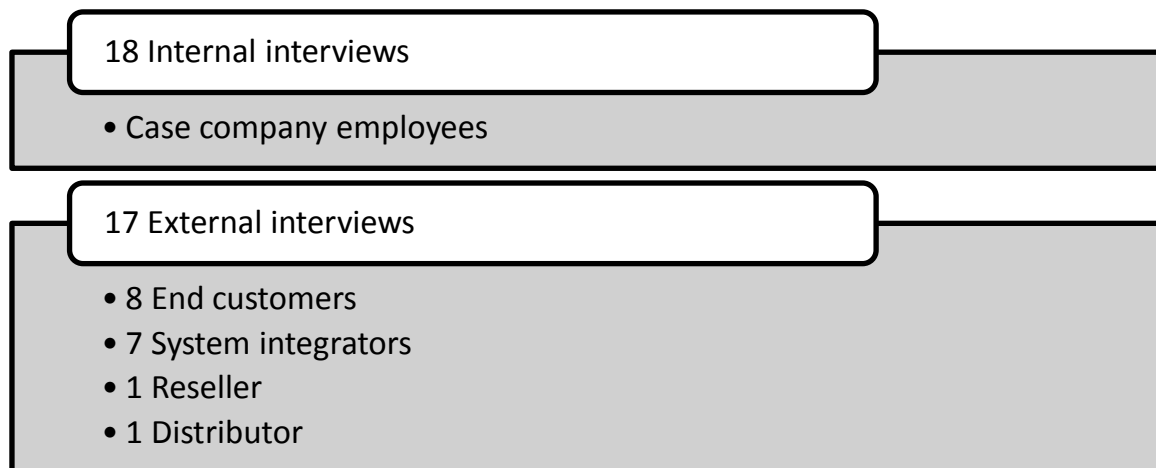
Figure 3 Overview of interviewees

To complement this body of information, data were also gathered from reviewing documents. This document review was used in the early phase of the study to get an initial overview of the company and the industry, and prepare interview templates and subjects. Both internal company documents and public documents such as annual reports were reviewed. One problem of document review is that the quality of data may be questioned; therefore great care was taken in only relying on documents with proven quality, such as externally published documents and internal documents verified as reliable by company employees. The entire data collection process is summarized in *Figure 4 The research process – Data collection*.
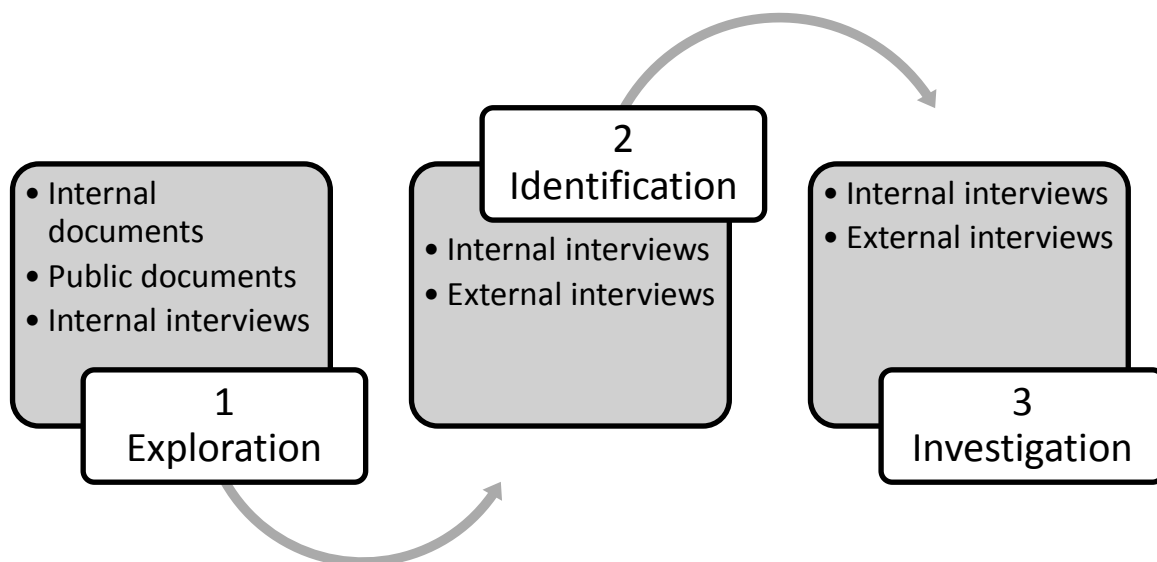
Figure 4 The research process - Data collection

2.3 Analysis method

The main method used for analysis of the gathered data was content analysis (Bryman & Bell, 2010, p. 289-308). In order for this to be done, all interviews were transcribed with emphasis on labeling the content in relation to the different research and investigation-specific questions. This way, a more systematic, efficient and organized approach towards the analysis of the data was possible. Such an approach was deemed especially important since the different phases of the data collection overlaps in the sense that one interview may provide input to more than one phase or research question. All the data relevant to the analysis is presented in section *4 Empirical Findings.*

The empirical findings were analyzed based on the frameworks presented in section *3 Theoretical Framework.* The frameworks aim to compile the most recognized theories and academic works relevant for the subject of the study. The collection of literature and theories was made through a comprehensive search in recognized databases and libraries, such as JStor, Google Scholar and Ebscohost. Keywords used were related to external and internal analyses of services, network theory, business ecosystem theory and how to design a service offering, and included *downstream value, external analysis, internal analysis*, *network, ecosystem*, *servitization* and *service offerings*. The empirical data was examined based on these theories in order to analyze and make appropriate recommendations and conclusions grounded in theory, while at the same time consider and appreciate industry- and company-specific factors that are not sufficiently researched in academia.

2.4 Research quality

Validity and reliability are two concepts that can be used in evaluating the quality of a study (Bryman & Bell, 2010, p. 41; Holmén, 2013). Validity concerns the integrity of the conclusions that are drawn from a study, while reliability concerns the repeatability of the study, or the consistency in the research if the study were to be carried out by another researcher (Bryman & Bell, 2010, p 41-42). Furthermore, while reliability is a stand-alone criterion, validity can be divided into several types addressing different aspects of the study. Three dimensions of validity that is especially relevant for case studies are internal, construct

and external validity, and these dimensions will therefore be discussed in relation to this study, together with the reliability. These concepts and their implications for this study are also summarized in *Table 2 Quality measures*.

Internal validity concerns the issue of causality and the degree of assurance found in the findings and the drawn conclusions (Bryman & Bell, 2010, p. 42; Holmén, 2013). Three ways of ensuring a high internal validity, and thus sound conclusions, are thick descriptions, internally coherent findings and a systematic relation between concepts (Holmén, 2013). The research design and data collection methods facilitate this to some degree naturally, and are further strengthened by a large amount of data and a structured analysis. However, due to the complexity of the subjects that were investigated, delimitations were set and therefore all concepts could not be investigated equally in-depth. The internal validity is therefore deemed as medium.

Construct validity concerns the degree to which the measures chosen actually reflect the concept that is investigated (Bryman & Bell, 2010, p. 42; Holmén, 2013). Ways to ensure high construct validity are through multiple sources of evidence, chain of evidence and respondent reviews (Holmén, 2013). Multiple sources of evidence were ensured through triangulation between a document review and a large amount of interviews, conducted with great variety between the interviewees, both due to positions and companies. Additionally, a chain of evidence was developed through the three phases of the data collection, originating from the research questions and consecutive investigation-specific questions. Respondent reviews were ensured through follow-up interviews or more informal post-interview discussions where it was deemed necessary. The construct validity is therefore deemed as high.

As for external validity, it is a concept that concerns the extent to which the findings of a study can be generalized beyond the specific research context (Bryman & Bell, 2010, p. 43; Holmén, 2013). Ways to ensure this are proposed as thick descriptions and characterization of the nature of the subject. However, as case studies are by nature defined as a context-specific research, external validity is traditionally difficult to achieve in these studies. Furthermore, the subject under study is at an early stage of development at the case company, and it was therefore important to be very context specific in order to cover as much as possible. Measures of external validity were however achieved through a variety of interviewees in order to grasp all aspects of the context. Despite these efforts, the external validity is deemed as low.

Reliability concerns the possibility for the study to yield the same results, i.e. how repeatable it is if it was to be carried out by another researcher, using the same methods (Bryman & Bell, 2010, p. 42; Holmén, 2013). Ways to ensure the reliability of a study is to develop clear and understandable research questions and carry out the activities with great care, consideration and structure. Reliability was pursued by basing the development of research questions on an in-depth understanding of the problem formulation, company dynamics and industry context acquired through several open interviews and both public and internal documents. Furthermore, the research questions were broken down into more tangible investigation-specific questions. The research questions were investigated through three consecutive phases aiming to answer each of these questions, carried out concurrently in order to be able to make adaptions of new information should occur. However, there is a possibility that all relevant data were not acquired, due to the complexity of the study and the early phase it is in at the case company.

Quality measure	Internal validity	Construct validity	External Validity	Reliability
Deemed as	Medium	High	Low	Medium/high
Motivation	+Large amount of data +Structured analysis -Subject in a very early phase -Delimitations and scope in regards to complexity	+Large amount of data +Variety in interviewees +Triangulation +Follow up interviews +Post interview discussions	+Large amount of data +Variety in interviewees -Very context specific investigation -Subject in a very early phase	+Clear research questions +Structured phase and data gathering +Structured analysis -Subject in a very early phase

3 Theoretical framework

This section contains the theoretical concepts and models used to analyze the empirical findings gathered in the data collection. The section is divided into four main areas; strategic management and vertical integration, internal analysis, external analysis and service offering design. Strategic management and vertical integration focus on how firms are able to achieve and sustain competitive advantages allowing them to outperform competitors, and how internal and external factors preceding a strategic vertical integration move affects the firm's capability to succeed. Internal analysis entails the resources and capabilities that constitute a firm's competitive advantages, while an external analysis entails the competitive environment in an industry. The service offering design outlines requirements, benefits and challenges for a firm aiming to perform a transition from product-centered to an increased service-orientation. Also, models for how to package services and generate revenues are outlined in this section.

The frameworks were chosen based on a thorough literature review, focused on recognized frameworks with broad applicability. First, strategic management literature were reviewed in order to find literature accurately describing the case company's situation from a macro perspective, and factors necessary to consider preceding a decision of vertical integration. Literature by Teece, Pisano and Shuen (1997) and Wise and Baumgartner (1999) were appropriate for describing the rationale for why to capture value downstream in the value chain. Literature for how to evaluate the potential for each of the services and design the service offering was also required for this study. Due to that the subject of the study is in an early phase, frameworks covering detailed conditions in the field of industry competitiveness, resources and capabilities of a firm or service offering design were deemed as too narrow to fit the criteria. Instead, frameworks that were deemed appropriate were characterized by applicability on a broad scale, assessing the main conditions necessary to evaluate the potential for each of the services and design the service offer. The resource-based view as outlined by Barney (1991) and Grant (1991) was chosen for the internal analysis of the resources and capabilities of the firm. The framework outlined by Porter (2008) describing

how to analyze industry competitiveness was chosen for the external environment analysis, and the concepts of network density and network closure, as outlined by Ahuja (2000) and Williamson and Meyer (2012) were used to complement the shortcomings of the Porter framework (2008), addressing the dynamics and response of the ecosystem. As the main purpose for the service offering design framework was to be used as a foundation to analyze and propose recommendations for how the case company should proceed, it was a necessity that the framework included practical applicability and managerial implications. Oliva and Kallenberg (2003) propose actions for how a firm can transition from product-centered to being more service-oriented, with managerial implications following each stage in the transition. Therefore, the framework by Oliva and Kallenberg (2003), complemented by which revenue models to consider when investigating additional revenue streams, as presented by Osterwalder and Pigneur (2010), were deemed appropriate for this purpose.

3.1 Strategic management and vertical integration

The fundamental question in the field of strategic management is how firms achieve and sustain competitive advantage (Teece *et al*., 1997). This becomes especially relevant for firms in industries characterized by innovation-based competition where Schumpeterian rents and creative destruction prevails. In recent years, the value in such industries has been pushed downstream towards the end customers in the value chain (Wise & Baumgartner, 1999). This means that the value previously captured by producing firms has in recent years been transferred to firms closer to the end customers, performing activities such as operation, maintenance and repair. In order to re-capture a larger share of the value in such an industry, manufacturing firms faces several decisions. One decision of great importance is the "make-or-buy"-decision (Balakrishnan & Wernerfelt, 1986), which commends the vertical scope of the firm. The vertical scope implies which position a firm takes in the industry and which activities they perform. Downstream markets tend to offer important benefits such as higher margins and require fewer assets than producing products (Wise & Baumgartner, 1999). Also, as manufacturing firms most often possess intimate knowledge of the products and market, they are well-positioned to carry out downstream activities and capture a larger share of the value.

To determine a vertical integration move, there are different factors necessary to consider. Two of the most important are the firm-specific capabilities and resources, and the external competitive environment of the firm (Maylor, 2010; Stuckey & White, 1993). The firm-specific capabilities and resources are necessary to evaluate as a firm aiming to integrate vertically should focus on activities that builds upon or extends their existing capabilities (Teece *et al*., 1997). This is also called related diversification, and is especially justifiable when a firm's traditional market declines. The external competitive environment is necessary to consider as industry structure plays a central role in determining and limiting strategic actions (Porter, 1979). Investigating the competitiveness and profitability of an industry or industry segment allows an actor to make an informed decision when aiming to alter its position through e.g. a vertical integration move.

3.2 Internal analysis

One way of assessing the firm-specific capabilities and resources that a firm is able to build or extend upon, is through the resource-based view (Barney, 1991; Grant, 1991). This framework is applicable in early phase studies where the aim is to identify and categorize resources and capabilities on a general level. The focus of this framework is on the resources, capabilities, and competencies that lead to the competitive advantages possessed by a firm. A resource is the fundament of this model, and can be broadly categorized into three

dimensions; physical capital resources, human capital resources, and organizational capital resources (Grant, 1991).

Physical capital resources entail resources such as geographical location, equipment and financial resources. Human capital can be the intelligence, experience and training residing in a firms' employees, while organizational capital resources addresses a firms' internal processes, coordination processes and organizational structure. The next level of the resource-based view is capabilities, and can be defined as a collective capability, activity or action that is enabled by a certain set of resources (Grant, 1991). These can again be aggregated to a more abstract level; competitive advantage, which comprises the factors that make a firm perform better than its competitors.

Carrying out the resource-based view analysis should be done in four steps (Grant, 1991). The first and second steps are to respectively identify the resources and capabilities that a firm possesses. The third step is to identify which of these resources that are sources of sustainable competitive advantage; i.e. which of these resources are crucial to the success of the firm. The last step is to develop strategies that fit with the identified resources and capabilities of the firm. This process is presented in *Figure 5 Resource-based view model*.
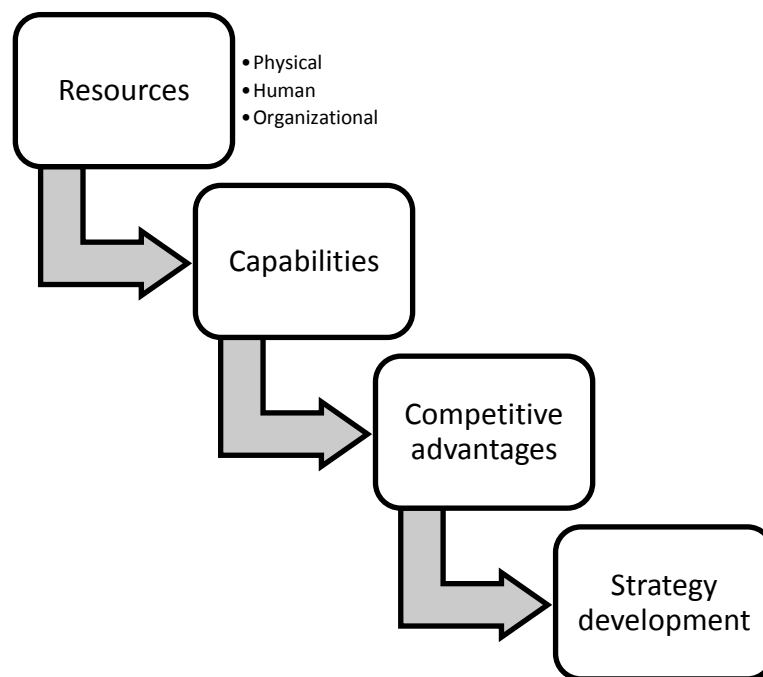
Figure 5 Resource-based view model. Source: Adapted from Grant (1991)

This process is closely related to the theory of core competencies, which supports that a firm should focus their efforts around the competencies that are of strategic importance to the success of a firm (Prahalad & Hamel, 1990). Related diversification entails the assessment of core competencies to decide which resources and capabilities to build or extend upon when deciding to integrate vertically or not (Teece *et al.*, 1997).

3.3 External analysis

The most recognized framework for analyzing the external competitive environment of a firm is the Porter's five forces of competitive advantage framework (Porter, 2008). Porter's five forces are applicable to studies where the aim is to investigate competitiveness and profitability of an industry or an industry segment, in order to assess its entrance attractiveness for a firm (Porter, 1979). This framework argues that responding to competitive

factors including and beyond direct competition is vital in order to sustain profitability. The framework is visualized in *Figure 6 Porter's five forces*. A Porter's five forces analysis consists of analyzing the following competitive factors:
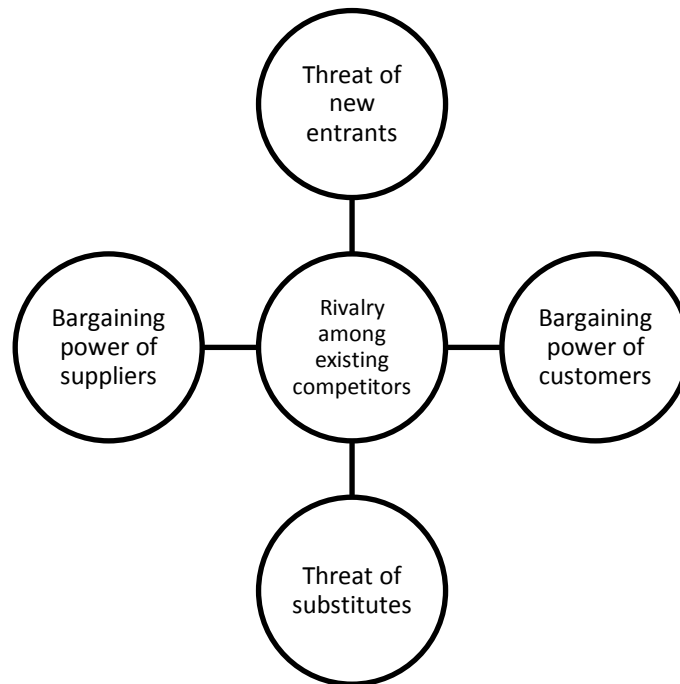
Figure 6 Porter's five forces. Source: Adapted from Porter (2008)

Rivalry among existing actors – this force entails the direct actions that an actor takes to gain an advantage relative to its competitors (Porter, 2008). Such actions can be either advertisement campaigns, service improvements, pricing discounts or reductions or new product introductions. Rivalry is often most intense if actors are roughly of equal size and power and the growth of the industry is slow.

Threat of entry – this force entails the difficulty related to a new actor entering an industry, which would increase the internal competition (Porter, 2008). The extent of this force is depending on the entry barriers of the industry, and these can vary greatly. Examples of entry barriers are capital requirements, preemption of distribution channels, government regulations, or the intensity or importance of reputation and relationship between actors and customers.

Threat of substitutes – this force entails the extent to which other products or services can perform the same or a similar function or result with different means (Porter, 2008). If the threat of substitutes is high, it means that a product or service is more easily replaced and therefore the switching cost for the customer is lower.

Customer bargaining power – this force entails the extent to which customers can force down prices or demand more service or higher quality without an increase in price, often by competitive tendering where they compare the prices of different suppliers (Porter, 2008). Factors that can strengthen bargaining power can be that there are few buyers, or they buy in high volumes, or the products are standardized and the differentiation is small. Higher customer bargaining power also occurs if switching costs are low or if the products or services purchased are of low value to the buyer.

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Supplier bargaining power – this force entails the same as for customer bargaining power, but on the other end of the value chain; the extent to which a supplier can drive up its prices for their products or services (Porter, 2008). Factors that can strengthen the suppliers bargaining power are if they can serve many different industries, the product or service they offer is unique or extremely differentiated or if incumbent industry actors face switching costs related to changing suppliers.

The forces should be ranked based on an assessment of the relevant factors affecting each of the five forces (Porter, 2008). This ranking should comprise several levels, and correspond to the qualitative or quantitative assessment of the force. The ranking could range from - - to ++ (Manktelow, 2008). The rank is assessed based on which factors that are affecting each force, and if the impact of that factor is beneficial or detrimental for a firm aiming to enter the industry or industry segment. Each factor is given a score of --, -, + or ++, which when added result in an average score that is ranked low, medium or high.

Despite the strengths of this framework, one of its major limitations is that is assumes a hostile business environment where there is a constant fight between the actors in order to gain and maintain power and leverage it in order to succeed and keep a competitive position (Recklies, 2013). A trend arising is that markets are moving from a hierarchical structure towards a network-based structure characterized by close collaboration and strategic alliances, and such factors are neglected by the Porter's five forces framework.

One kind of network structure that is becoming more and more common in a market today, is the structure termed business ecosystems (Williamson & Meyer, 2012). Such an ecosystem is characterized by many different actors carrying out different, independent activities but the collective outcome is higher than it would have been if they were carried out in isolation. Therefore, business ecosystems are in need of a certain synchronization of activities in order to prevent that the value offered to the end customers decreases.

In terms of being the lead firm in a business ecosystem, certain benefits arise such as that the lead firm can meet the customer demand for complex and sophisticated end customer demands, while at the same time uphold quality in its core activities. Additionally, such network structures may facilitate for enhanced innovation and novelty in product development (Ahuja, 2000). One of the most important conditions for such benefits is that the ecosystem is characterized by high density and high closure. Such networks consist of a large amount of actors, each actor possessing many connections to other actors. This implies a strong and tight connection with the partners, resulting in a high amount of collaboration and efficiency in how knowledge is diffused throughout the ecosystem.

But there are also risks associated with being part of a business ecosystem (Williamson & Meyer, 2012). The lead firm of a business ecosystem might experience that they are incapable of reaping sufficient revenues from their products, or at least they might feel that their revenues are too low compared to their position in the business ecosystem. However, actions towards generating increased or additional revenues might be especially complicated when being part of a business ecosystem. This is because in such an ecosystem, all activities and services are usually occupied by partners, and therefore such actions might intrude on the lead firm's partners' business and revenues. Additionally, the density and closure of ecosystems will lead to a rapid diffusion of such actions, hurting the reputation for the lead firm and damaging the dynamics of the ecosystem as a whole (Ahuja, 2000; Williamson & Meyer, 2012).

3.4 Service offering design

The transition from products to services can be challenging for a firm with a product-centered orientation (Neu & Brown, 2005). Especially challenging for such firms is how to develop the service offering, how to serve the installed base of customers and how to expand the service offering from the initial position (Oliva & Kallenberg, 2003). A process outlining important stages in such transitions, including actions, goals and triggers, has been developed and is presented in *Figure 8 Product-Service transition.* This process has been developed through a meta-analysis, and is used to guide practitioners in the transition of their firms from product-centered to being more service-oriented.

There are three factors enabling a successful transition from product-centered towards being more service-oriented; strategy, external environment and organizational capabilities (Neu & Brown, 2005). It is important to establish a proper alignment between these to fit the conditions of a highly complex market.

First, it is necessary to be market oriented in order to understand the market needs (Neu & Brown, 2005). This entails to continuously interact with partner businesses and customers in order to develop an understanding of what value proposition mix that is desired regarding both goods and services. Second, whether managers should pursue identified service opportunities depend on the firm's ability to leverage existing organizational resources. These are required to provide a competitive advantage in the new position on the goods-services continuum. The goods-service continuum is presented if *Figure 7 Goods-Service Continuum.*
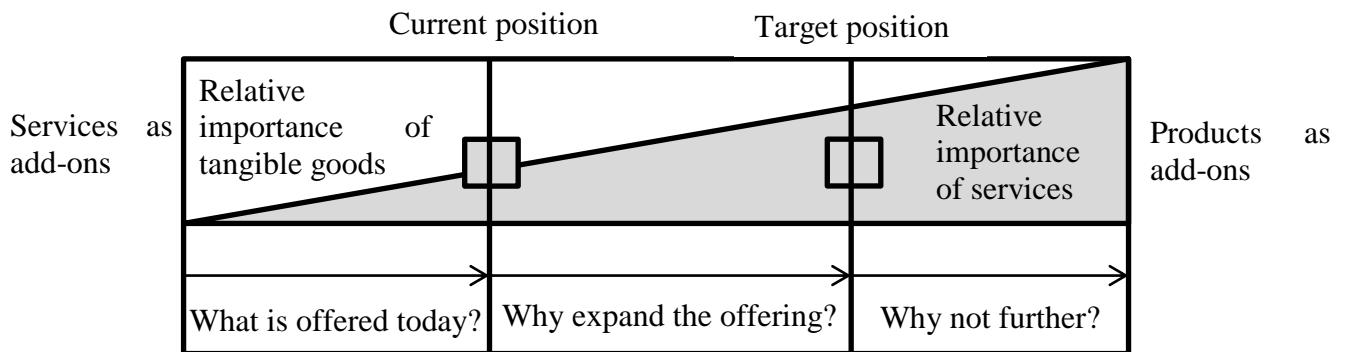
Figure 7 Goods-Service Continuum. Source: Adapted from Oliva & Kallenberg (2003)

Also, it is contended that technology can, and should, play an instrumental role in establishing a competitive advantage (Neu & Brown, 2005). Firms possessing abilities to develop, support or manage a customer's complex business system through technology, can achieve prominent advantages over the firms that do not possess such abilities.

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┌─────────────────────────────────────────────────────────────┐
│                         Stage 1                             │
├─────────────────────────────────────────────────────────────┤
│            Consolidate product-related services             │
└─────────────────────────────────────────────────────────────┘
                             ▽
┌─────────────────────────────────────────────────────────────┐
│                         Stage 2                             │
├─────────────────────────────────────────────────────────────┤
│           Entering the installed base service market        │
└─────────────────────────────────────────────────────────────┘
                             ▽
┌─────────────────────────────────────────────────────────────┐
│                         Stage 3                             │
├──────────────────────────────┬──────────────────────────────┤
│  a. Expand into relationship- │  b. Expand into process-     │
│         based services        │        related services      │
└──────────────────────────────┴──────────────────────────────┘
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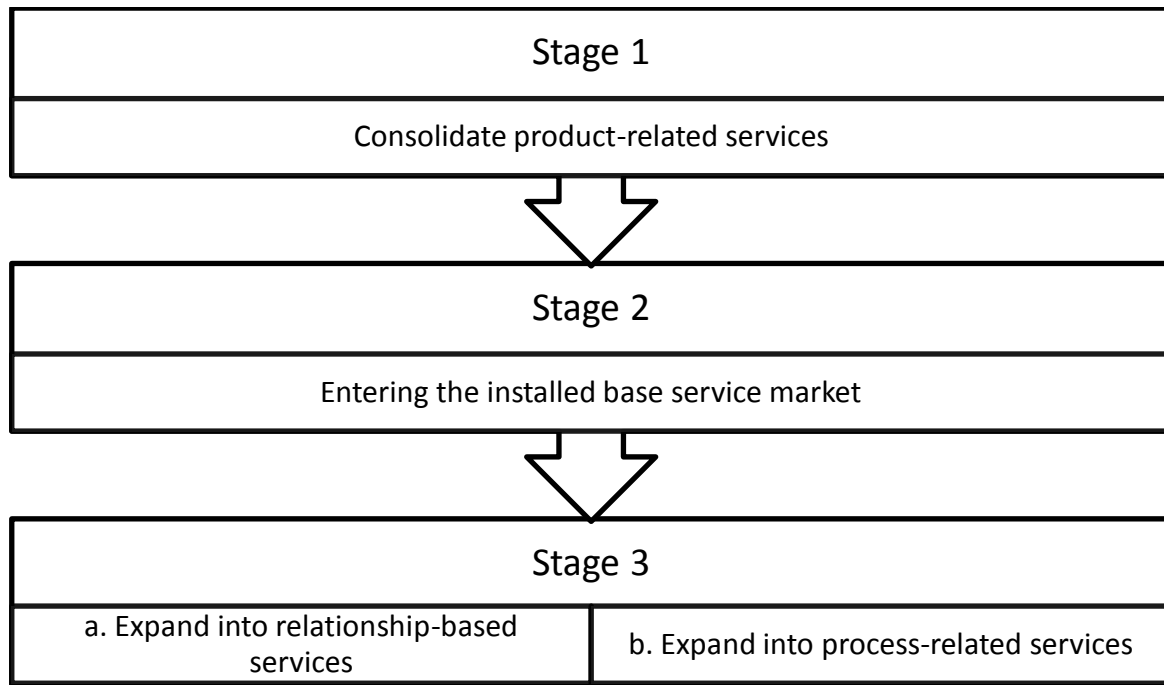
Figure 8 Product-Service transition. Source: Adapted from Oliva & Kallenberg (2003)

Stage one is to consolidate the product-related services (Oliva & Kallenberg, 2003). Those services are most often seen as necessities to sell products, and are traditionally developed in different departments within a firm. They are usually fragmented and unprofitable, and are not prioritized by a firm's management. The triggers for a consolidation could be customer complaints or competition within the service space. In order to perform this transition, the services should be put in one distinct business unit and they should be monitored and evaluated so that management are able to review if the services are a success or a failure. The consolidation and monitoring is normally done with the aim to improve the efficiency, quality and delivery time of the services provided, and are important initial actions to achieve increased customer satisfaction. Finally the company should add services not already performed to support the initiative of improving overall service quality.

Stage two is to enter the installed base service market (Oliva & Kallenberg, 2003). This should be preceded by an identification of opportunities in the service market, stemming from analysis of the external environment. In order to be able to exploit these opportunities, a company aiming to do this must set up the necessary structures and processes. However, there are two major challenges related to this.

The first one is the culture that characterizes a product-centered firm. In order for a company to start generating revenues from services that have previously been perceived as add-ons necessary to sell more products, it needs to go through a major transformation. Instead of incorporating services in the firms current departments, the firm should build an adjacent organization and run the service organization as a profit center with an agenda of its own. This will reduce the transformation needs and build a culture in the new organization that value services in the new organization. Important in that organization is to learn to sell, deliver and bill for the provided services.

The second challenge is to invest in infrastructure in order to offer a local presence. This investment will not generate returns immediately, but is necessary in order to respond to local requirements. The investment also implies that it is necessarry to develop capabilities that

enables assessment and knowledge-sharing, and management of a large organization of service staff. In this stage the aim should be to establish the organization as a reliable actor in the service market, fine-tune the processes and build a reputation as a credible actor able to deliver on its promise.

Another challenge is that customers often use service-provider identity and reputation as a measure when evaluating service offerings (Grönroos, 1998). This makes it more difficult for a firm entering the service market to achieve credibility among potential customers. In order to overcome this challenge, firms should seek to initiate relationships with the customers and deliver on their promises, thus gaining credibility in the service market through building a highly reputable corporate image.

As the third stage is two-fold, the first part of it is to expand into relationship-based services (Oliva & Kallenberg, 2003). This implies a change in how the services are priced, from markup for labor and parts for each activity performed toward a fixed price covering all services over an agreed period of time. The incentives for the service provider are clear, fixed price contracts that reduces the variability and unpredictability of service demand and allows for higher capacity utilization over the period. However, to persuade the buyer to switch to relationship-based contracts the focus must be on equipment availability. This allows the buyer to quantify the value of the offering , which is a necessity in order for him to perceive the offering as beneficial. The profitability for the service provider then lies in their ability to assess operating risks, and in how accurate their prediction of equipment failure is. In this, a product manufacturer most often have an advantage, as they possess data over common product failures, experience in maintaining and repairing their own products and product development and system integration expertise to develop and deliver better maintenance practices.

The second part of the third stage is to expand into process-centered services (Oliva & Kallenberg, 2003). Instead of focusing on the product efficacy, the focus is shifted to the efficiency and effectiveness of the end-users process. This is equivalent to shifting the focus from being a producing firm to solution provider, developing services to continuosly support and improve the utilization and effectiveness of the installed base. Firms in this phase should develop consulting capabilities and expand into services involving products from other producers. This implies that firms seeking to take this step are required to provide these services over the complete lifecycle of the products. There are two main challenges with this, the issue of replicating the human resource department and knowledge management capabilities of a professional service firm, and the issue of developing new network partnerships allowing the firm to market and distribute their services to a new set of customers. Externally, this stage requires marketing efforts and time, as the firm needs to establish an ongoing relationship with the end-user.

It is suggested that before attempting to sell advanced services, a firm should have developed capabilities and proficiency in basic product-related services (Oliva & Kallenberg, 2003). Furthermore, little evidence has been shown that vertical integration leads to success in providing advanced services. Instead, when moving into operational services, a product manufacturer could integrate horizontally and utilizing network partners to deliver the services.

3.4.1 Types of bundling and payment models
There are several different approaches when designing a service offering: fee for service, bundled payment, comprehensive care payment and pay for performance (Silversmith, 2011). The majority of these regard bundling, and the rationale for bundling is two-fold (Guiltinan,

1987). First, there is a high ratio of fixed costs over variable costs in offering services. Cost sharing between activities results in low marginal costs for adding one more activity. Second, the services offered by most service businesses are generally interdependent in terms of demand. This means that an actor purchasing a certain service is likely to demand another service within the same product or industry domain, which is most often what service businesses offer.

Fee-for-service implies an unbundled payment model where the customer pay per service (Miller, 2009). Each specific service is billed and paid for, allowing suppliers to customize resources depending on the direct need.

Bundled payment implies a single payment for a group of services, needed during an certain time frame (Miller, 2009). This gives one supplier of services the responsibility of providing that service during a specific period of time.

Comprehensive care involves providing all necessary services for a customer during a specific period of time (Miller, 2009). This payment is adjusted based on the customer condition and other characteristics that affect the level of services needed.

Pay for performance is an outcome-based payment model in which customers pay different amounts depending on how well the outcome fulfilled the desired goal (Silversmith, 2011). The benefits for the supplier with this option are quality focus and cost reduction. Detriments are that there are difficulties in measuring performance as well as a uniform use of performance metrics.

3.4.2 Development of revenue models

There are several ways to generate revenues from the service market (Osterwalder & Pigneur, 2010). Three models that are frequently used are the licensing model, the subscription model and the usage model.

Licensing allows customers to use intellectual property in exchange for licensing fees (Osterwalder & Pigneur, 2010). This means that service providers are able to generate revenue without having to commercialize a service (Dubey & Wagle, 2007).). Most often the licenses are purchased up-front, which leads to large investments for the customers and low predictability of revenue streams for the provider. This is a strictly transaction-based relationship in which the customer risk having to pay extra for maintenance contracts and go through expensive and time-consuming upgrades.

The subscription model allows service providers to charge users a periodic fee to subscribe to a service and this fee is incurred regardless of actual usage rates (Rappa, 2004). This allows providers to enjoy recurring revenues and to monitor customer usage enabling them to enhance their offering (Dubey & Wagle, 2007). However, using this model result in the need for providers to be close to their customer, keep their products updated and be more responsive to customer needs to not risk losing subscribers. Furthermore, there are challenges for providers in ensuring reliability for their customers in accessing the service, as well as security issues, such as guaranteeing data privacy. The main capability gap for providers that traditionally use the licensing model in offering services through the subscription model is to develop operational and customer service skills. This includes handling of massive data centers, system monitoring as well as billing.

The usage model is based on a pay-as-you-go approach, where the customer pays only for actual use of the service, regardless of the time period the service is used (Rappa, 2004). This

is a transparent and simple revenue model, but it entails that metering of the usage is possible (Armbrust *et al.*, 2009). The usage model shares many features with the subscription model, such as the need for providers to be close to their customers. However, it implies detriments such as reliability and security issues associated with not owning the service. Therefore, going from a licensing model towards a subscription or usage model is most often perceived as something negative by customers.

4 Empirical findings

In this section the findings from the data collection are presented. First, the business ecosystem from the case company's point-of-view is described, comprising a description of all the actors and their relations to the case company. Then the internal resources and capabilities from which the company's competitive advantage stems from are outlined. The last part of this section consists of a comprehensive and detailed description of all current services in the industry, together with which actors that are providing the different services and to whom they are offered.

4.1 Business ecosystem

As mentioned previously, the case company has been the main driver behind a technological shift from an old technology to a new in an industry characterized by a conservative mindset (Case Company Homepage, 2014). They challenged this industry with their innovative products, leading the way towards a new product standard. As the main driver for this new technology they had to convince the whole industry of the benefits associated with it. They did this by building a partner structure, where they did not view the other actors as customers or competitors, but as partners. They took the responsibility of educating these partners, positioning the case company as a knowledge leader in the business ecosystem. They chose to focus on the development of their core products, while allowing for spillover knowledge to be captured by actors specializing in the production of complementary components. This again resulted in a closely connected business ecosystem where all actors are, to varying degrees, dependent on the other partners in order to succeed. The business ecosystem is presented in *Figure 9 Business ecosystem.* The ecosystem is presented from the case company's point-of-view, and the competitors are excluded. This is due to that these actors do not have any direct implications on the internal dynamics of the business ecosystem. Also, two other actors that are not parts of the business ecosystem are Return merchandise authorization (RMA) and Equipment manufacturing (EM) partners. These actors are excluded due to that they have a limited interaction with the rest of the business ecosystem. Their core businesses are focused on supporting producing firms in their return merchandise authorization activities. The return merchandise authorization process is described in section *4.3.21 Return merchandise authorization,* in which the RMA and EM partners' roles are described in more detail.
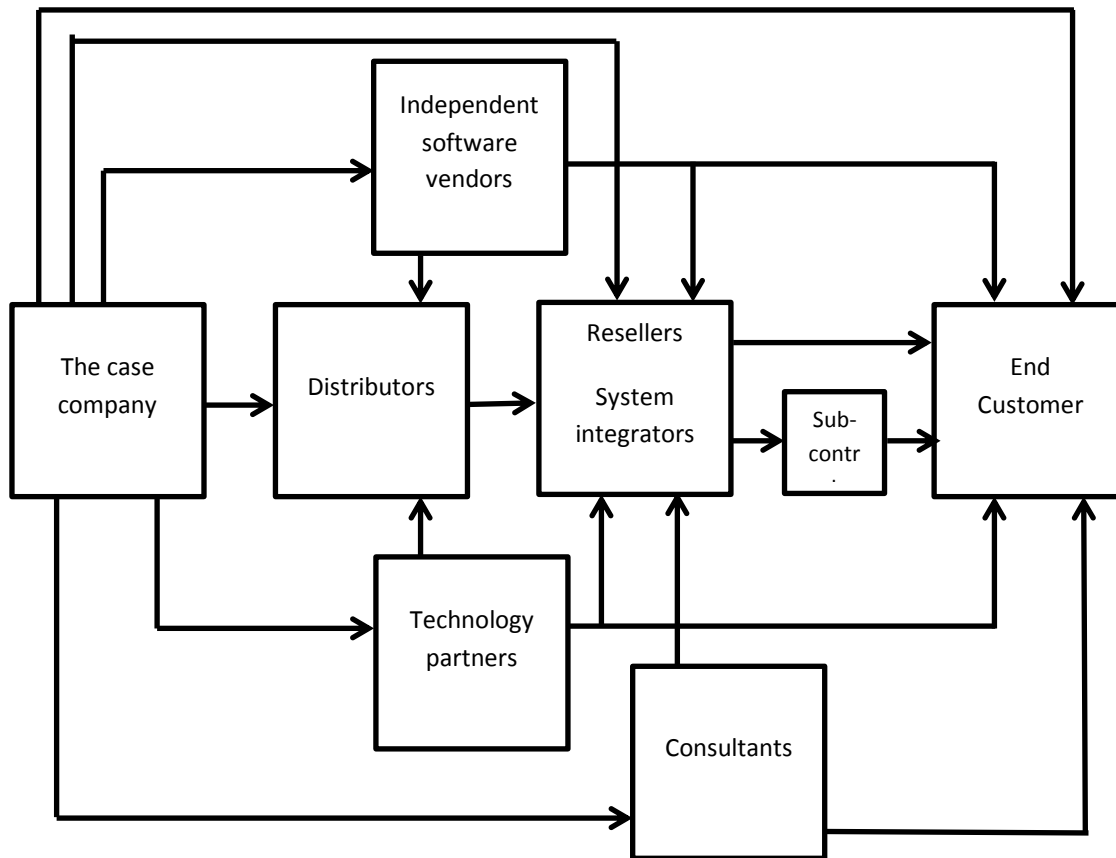
Figure 9 Business ecosystem

The lead firm in the ecosystem is the case company (Case company employee 1, 2014). Their core business is research and development of products, comprising radically new as well as incremental innovations. The case company uses several suppliers, but as their relationship with them is transactional and isolated from the rest of the industry, they are not included in the business ecosystem. The case company has also outsourced the actual manufacturing of their products, but as the interaction between the case company and the manufacturers is also isolated from the rest of the ecosystem, resulting in negligible impact on the business ecosystem, they will not be discussed further. However, the case company has chosen to outsource many activities and development efforts, such as warehousing and development of software and hardware complementing their products, to other partners which they collaborate closely with. This has provided the case company with scalability, agility and flexibility and has strengthened their relationships with the partners in the ecosystem by allowing them to capture more value.

The case company develops most of the software used within the products in-house (Case company employee 3, 2014). They also develop infrastructure software necessary to operate and analyze the systems in which the products are implemented. However, there are software functionalities they have chosen not to develop in-house. This has been done both in order to allow the case company to focus on their core business, and because other actors possess strong competence in development of such software functionality. This development is thus outsourced to independent software vendors (ISVs), whose efforts complement the case company's products and add new functions to it (Internal Documents, 2014). Upstream in the value chain, these ISVs interact with the case company in order to achieve compatibility between their software solutions and the products. This relation is, however, not financial, but consists of co-development and collaboration. Downstream, these ISVs are interacting with

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several actors, both tiers of the distribution network, system integrators and resellers, and directly with the end customer. This relation is more transactional than the relation with the case company and other actors that offers similar products.

The case company has also outsourced the development and sales of all infrastructure and complementary hardware products that are not critical to their own products (Internal Documents, 2014). These actors are called Technology Partners (TPs). The products that these actors offer are more commoditized than the products of the case company and their competitors. These products can be applied in entirely different systems as well, as those products are of supportive nature and used in digital transfer and storage. However, a core product such as the products developed by the case company is needed to enable the functionality that creates value in this industry. In terms of downstream interactions, they have a transactional and financial relationship with the same actors as the ISVs; both tiers of the distribution network and the end customer.

As for the distribution and sales of products downstream towards the end customer, these activities are also handled by other parties than the case company. This distribution network is divided into two tiers; first- and second-tier distributors (Case company employee 1, 2014; Internal Documents, 2014). The first tier consists of pure distributors that distribute a variety of products, but in the context of the case company's industry, they distribute both the hardware and software products exclusively to the second tier of the distribution network (Distributor 1, 2014; Case company employee 1, 2014, Internal Documents, 2014). Upstream, these distributors are supplied with products from the case company, its competitors, TPs and ISVs. In order to do this, the distributors have developed proficiency in warehousing activities such as procurement, material handling, logistics and information sharing. In addition, several distributors offer configuration services, bundling of products, and customer support (Distributor 1, 2014). Further, the distributors also function as an actor providing the second tier with product and system expertise. This expertise comes from their role as an aggregator of information from a wide range of suppliers within the industry.

The second tier consists of two types of actors, resellers and system integrators (Internal Documents, 2014). These actors differ in the sense of their offerings, as resellers are more transactional and only sell the products downstream to end customer, while system integrators offer a more complete solution. These complete solutions can include system design, installation, operation and maintenance. In some cases, system integrators might choose to outsource some of these activities to subcontractors. Upstream, both the resellers and the system integrators are supplied by the distributors, ISVs, TPs and in some cases directly by the case company's competitors. In the context of the case company, the actors in the second tier of the distribution network are ranked in varying degrees of partnership, based on the volumes of products they sell and commitment to the case company in terms of loyalty and sales growth (Case Company Homepage, 2014). Being a higher ranked partner provides benefits such as cheaper or free-of-charge educational offers and training, in addition to discounted prices on the products. An important part of the system integrators business is that they are not only offering solutions that are related to the products of the case company (System integrator 1, 2014; System integrator 2, 2014; System integrator 3, 2014; System integrator 4, 2014; System integrator 5, 2014; System integrator 6, 2014; System integrator 7, 2014). They are also offering the same solutions and services for many other products as well, related to different technology-intensive industries. This allows customers to use one provider for a wide range of products and services, an option appreciated by a large amount of end customers (System integrator 2, 2014).

As for the subcontractors of the second-tier partners, these firms can handle either installation or operation of the systems (Internal Documents, 2014). The core business of installation firms is the deployment of a system, but the scope of their activities often also includes system health monitoring and maintenance. For the operation firms the core business is system operation, but most often they also perform activities related to system operation which require a physical presence (End customer 1, 2014; End customer 2, 2014). These activities are however not always related directly to the industry in which the case company operates in. The subcontractors have a limited interaction both upstream and downstream, only interacting with the system integrators, resellers and end customers (End customer 2, 2014). Especially for installation firms, they operate the same way as the system integrators, which means that they are providing installation for a wide range of products and systems, not only those related to the products that the case company offers.

The ecosystem also includes independent consultants (Internal Documents, 2014). They often act as a third party hired by either the customer or a system integrator in assisting with system design when there is need for expertise in customizing a system to fit specific requirements. Upstream, these consultants mostly have a relationship-based interaction with ISVs, TPs and the case company and their competitors in order to acquire knowledge about the systems and products.

The last actor in the business ecosystem are the end customers (Case company employee 1, 2014; Case company employee 7, 2014; Case company employee 9, 2014; Internal Documents, 2014). The end customer is most often a business, but can also be a private customer (Internal Documents; 2014). Furthermore, the end customers can be divided roughly into three different segments. These are small customers, medium customers or enterprise customers. Small customers possess systems that consist of 1-10 of the case company's products (Case company employee 6, 2014). Medium customers are typically operating systems that include 10-100 of the case company's products, while enterprise customers operate systems of 100 or more of the case company's products. Upstream, their main interaction is with the second tier of the distribution network, resellers, system integrators or the installers or operators, depending on the knowledge residing with the end customer. In the context of the case company, they engage in some interaction with the end customer. However, this is usually confined to the key accounts.

4.2 Company resources and capabilities

The case company possesses several resources and capabilities that have been critical to their double-digit growth and their ability to maintain the position as market leader in their industry (Case company employee 15, 2014; Case company employee 16, 2014). What resources and capabilities that constitute the competitive advantages of the case company have been derived from experienced individuals within the case company with strong industry knowledge. The resources, capabilities and competitive advantages are presented in the *Figure 10 Competitive advantage breakdown: Technological leadership* and *Figure 11 Competitive advantage breakdown: Loyal partner network* below.
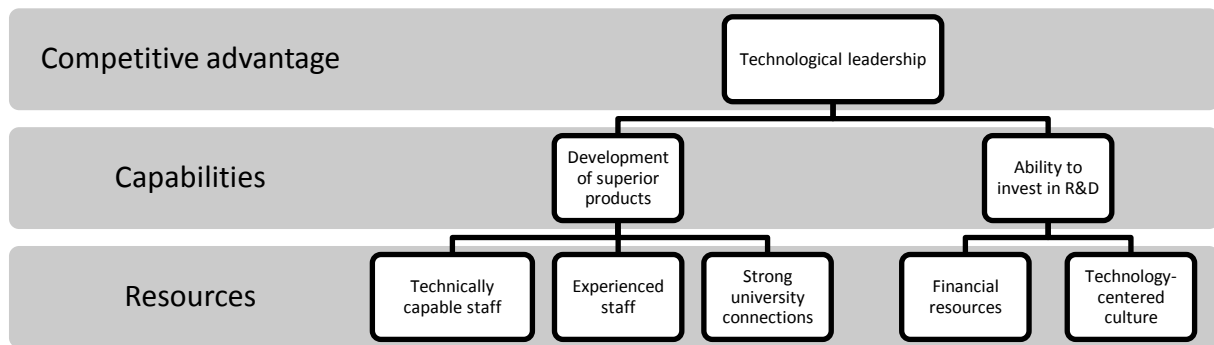
Figure 10 Competitive advantage breakdown: Technological leadership
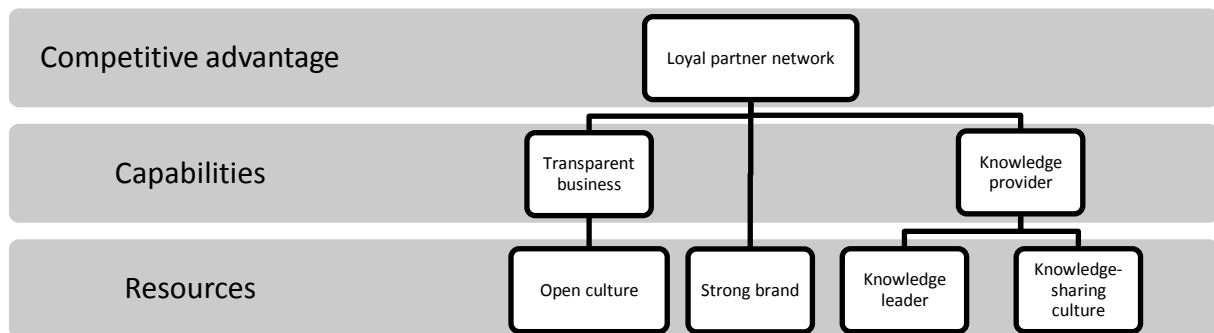
Figure 11 Competitive advantage breakdown: Loyal partner network

In terms of physical capital resources, the company possesses a strong financial position originating from a decade of strong financial performance (Case company employee 15, 2014; Case company employee 16, 2014). This has mainly been possible through the scalability of their business, resulting in that they have been able to sell large volumes of their products (Case company employee 16, 2014). Additionally, their superior products enable them to sell their products with higher margins than many of their competitors, further increasing their profits (Case company employee 1, 2014).

In terms of human capital, the case company possesses resources in the form of technologically skilled staff and staff with industry specific experience. The technologically skilled staff has been available mainly because of their geographical location that attracts capable graduates and their strict hiring criteria (Case company employee 15, 2014). One of the technical domains that they excel in is hardware knowledge. This hardware knowledge entails both digital and electronic hardware knowledge, and is considered to be a crucial part of the products they offer. Software knowledge is also something that is an important part of their products' performance. Even though the company outsources a lot of the software development, the core software that enables the most important functionalities are developed in-house and is something that employees in the company are considered to be skilled at. They have also developed skills in development of web-content and product-specific web-resources enabling customers and partners to access information regarding products and systems online (Internal documents, 2014; Case Company Homepage, 2014). The last technological domain which is a core part of the product development is systems technology (Case company employee 15, 2014; Case company employee 16, 2014). A condition necessary to successfully develop high quality products is to possess the required knowledge of integrating technologies and deliver full functioning systems, which the case company meets.

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In addition to this technology-specific knowledge and skills in the company, they also have highly experienced employees (Case company employee 15, 2014; Case company employee 16, 2014). This is because many of their employees often stay for a long period, and therefore the knowledge they possess resides in the company. This experience leads to that knowledge does not need to be rebuilt continuously, but rather built on and developed, which is a large reason for the company's deep knowledge in the areas mentioned above.

The case company also possesses several important organizational capital resources of high value, most of them embedded in the culture of the organization. Throughout their existence, they have encouraged an open culture, both internally and externally (Case company employee 16, 2014). As this open culture is firmly rooted in the organization, they are in general easy to work with, and this helpfulness and generosity has been transferred to their partners as well. Another part of their culture is their technological focus. Being a technology-centered organization results in that they are always looking to innovate and renew their products in other to stay in the forefront of the technology. A third dimension of their culture is their efforts of sharing knowledge (Case company employee 15, 2014; Case company employee 16, 2014). This is something that the case company has embraced as the main driver behind the technological shift, by facilitating for co-development, training, knowledge sharing, education and support of infrastructure products and technologies and allowing other actors into the market as partners. In addition to these culture-related organizational resources, the case company also possesses a strong brand (Case company employee 9, 2014). It is especially recognized among partners in the business ecosystem, and represents high quality and ease of use (System integrator 4, 2014; System integrator 5, 2014). As mentioned earlier, the business ecosystem has limited the case company's interaction with end customers, resulting in that their brand is not as strong among end customers as it is among the partners in the ecosystem (End customer 2, 2014; End customer 5, 2014).

These resources enable a set of capabilities that sets them apart from their competitors. One capability that mainly stems from their strong financial resources and their technological focus is the case company's ability to reinvest in R&D. About 15% of their yearly profits are reinvested in the R&D function, fostering further technological development and highly innovative products (Case company employee 1, 2014; Case company employee 15, 2014; Case company employee 16, 2014). Closely related to this is their capability to develop superior products, as their products are considered to be of highest quality available and providing the highest ease of use (End customer 6, 2014; Case company employee 16, 2014). This capability is something that is enabled by the knowledge and experience within several technological domains, residing in the knowledge and experience possessed by their employees, together with the technological culture of the company (Case company employee 15, 2014, Case company employee 16, 2014). Another capability that the company possesses is their ability to run a transparent business (Case company employee 16, 2014). Running a transparent business means that the case company are keeping no trade secrets, sharing technology and strive to assist their partners in all ways they can. This capability is prominent in several of their organizational units. The case company has also developed a capability of being a leader in knowledge-sharing. This is something that builds on their organizational resources, mainly in form of having an explicit knowledge-sharing culture.

Together, these resources and capabilities represent two distinctive competitive advantages that form the base for the case company's success the last two decades (Case company employee 15, 2014; Case company employee 16, 2014). First and foremost, they are regarded as the technology leader. Their products are of the highest quality available, in terms of performance, technology and design, as well as that they are the products with the highest

ease of use in the industry (End customer 6, 2014). This competitive advantage is something that they have upheld since the technological shift became evident, and stems from their superior products and continuous investment in R&D, with their complementing resources. The other competitive advantage that sets the case company apart from the competition is a loyal partner network (Case company employee 4, 2014; Case company employee 16, 2014). This leads to close collaborations and partnerships that are highly valuable to the company. This is something that is enabled because of the transparency of their business, and the complementing resources such as the open culture and knowledge-sharing mindset that they have.

4.3 Services in the industry

There is a wide range of existing services in the case company's industry. Which services that are offered by a single actor differs both between positions in the value chain and between actors holding similar positions in the value chain. Services also differ in terms of who receives them; some are aimed towards end customers, while other services are aimed towards partners in the ecosystem. The services will be described in detail below, comprising the characteristics of the services, who provides them, and whom those services are provided to.

4.3.1 System design

One of the most essential services that exist in the industry is the service of system design (Case company employee 9, 2014; Case company employee 10, 2014). This task takes place prior to the purchase of a system or of system components. More specifically, it comprises the evaluation of all different system components, both the case company's and its competitors' products in addition to all infrastructure products and applications delivered by the different partners in the business ecosystem. This evaluation is based upon the requirements of the end customers and the expertise of the actors that carry out the design, in order to design the best possible solutions within the limitations set, which are often budget-based (End customer 1, 2014; End customer 2, 2014; End customer 7, 2014). One way of offering this service is by official tendering, where the end customers decide upon a set of requirements and then picks the best proposal. Usually there are around three proposals for each tendering (End customer 1, 2014; End customer 2, 2014; End customer 3, 2014; End customer 7, 2014). In settings where actors are not obligated to use official tendering, the system design is a service that can be ordered directly from one actor and the design is then carried out in collaboration with the end customers (System integrator 3, 2014). It should be mentioned that certain end customers possessing a larger system, or where the system is critical for the company's operations, possess the capabilities in-house to conduct system design. However, they most often choose to include a third party providing them with expertise in order to receive an objective evaluation of how to design the system (End customer 4, 2014; End customer 6, 2014; End customer 8, 2014).

This service can be offered as an onsite service, which is the most common way, or it can be performed remotely. The services differ in the sense that for onsite system design, the actors involved in the service are physically present at the site where the system is to be installed. Then they are better able to assess factors such as lighting, obstacles and what applications that can be used in order to suggest the most suitable solution (System integrator 3, 2014). At times they use certain digital tools in order to decide which products to use and to visualize the proposed design (Internal documents, 2014; Case Company Homepage, 2014). These tools are developed either by suppliers or by independent software companies. Onsite system design is offered by a variety of actors, however to a varying degree. The main actors performing system design are system integrators, installers if the system integrator chooses to

outsource the service, resellers and consultants. This regards both onsite and remote system design. The case company provides onsite system design services for a small amount of their key accounts, but it is not something they offer as an explicit service. However, they do perform remote system design services through their sales engineers on a regular basis. Services related to system design software are performed by the software provider, most often an ISV (End customer 1, 2014; End customer 2, 2014; End customer 3, 2014; End customer 7, 2014).

Remote system design is when the design of the system is carried out without accessing the actual site. This is something that is not extensively offered, as it can be hard to assess all the different factors without being onsite. However, remote system design is something that is more effective and cost-efficient. It implies that the actor performing the design has information about the site of installation, together with adequate information about software, hardware and connected systems, and the appropriate digital tools. Currently, digital tools are offered to a wide extent by the case company. These are developed in-house and related to the products, software and the design of connected systems. These tools are compatible with well-known design tools such as CAD and SketchUp (Case Company Homepage, 2014). In order to successfully offer this service, it is highly important that the actor that offers it has staff specifically dedicated to system design – often called system engineers (System integrator 3, 2014). In terms of specific knowledge, this staff needs to have knowledge about all the three technical domains related to the products and systems – hardware, software and systems technology. For the onsite system design, it is important that the actor that offers it has a local presence, i.e. the ability to reach out to a large geographical area, at least nationally and preferable in several countries (Case company employee 16, 2014). For the remote version of this offer, site-specific details and digital equipment is essential to possess in order to carry it out in a satisfactory manner (System integrator 3, 2014; System integrator 4, 2014).

Table 3 Actors involved: Onsite system design

	Case company	Distributors	System integrators	Resellers	Installation firms	Operation firms	ISVs	TPs	Consultants	RMA/EM partners	End customers
Offered by	No	No	Yes	Yes	Yes	No	No	No	Yes	No	No
Offered to	No	No	Yes	No	No	No	No	No	No	No	Yes

Table 4 Actors involved: Remote system design

	Case company	Distributors	System integrators	Resellers	Installation firms	Operation firms	ISVs	TPs	Consultants	RMA/EM partners	End customers
Offered by	Yes	No	Yes	Yes	Yes	No	No	No	Yes	No	No
Offered to	No	No	Yes	No	No	No	No	No	No	No	Yes

4.3.2 Configuration

Configuration is the process where products are adjusted to fit the regulations of a specific market or the requirements of a customer (Distributor 1, 2014). Adjustments could be made on the hardware product, software within the product or on infrastructure products (Competitor Homepage 2, 2014). This service is mainly provided by distributors, system integrators, installers and resellers, but also by producing firms and consultancy firms specializing in configuration of certain product families towards producing firms (Distributor 1, 2014; Case company employee 1, 2014; Internal documents, 2014). The case company performs configuration for key accounts, but is not something that is performed regularly or something they offer as an explicit service. For smaller configurations and smaller systems, it

could be done during the installation process, but for more comprehensive configurations and larger systems it is most often conducted at the system integrator's or reseller's location (Case company employee 17, 2014).

Configuration is most often standardized and performed in large volumes, but there are occurrences where unusual requests results in an unstandardized configuration process. However, the competence needed for this service is product-specific and actors working with similar products have an advantage if willing to acquire this competence (Distributor 1, 2014). The end customer is most often not held liable for the costs when the configuration is necessary for the system integrator or reseller to sell their products in that certain market. However, when the end customer requires the configuration they are most often held liable for the costs, but it happens that the system integrator or reseller stands for it if the end customer is regarded a key account. In order to perform configuration services, an actor needs to possess or develop competence regarding the hardware, software and systems (Case company employee 7, 2014). How comprehensive the competence needs to be differs depending on which type of configuration service the actor aims to perform. Configuration associated with an installation requires knowledge regarding system integration and the products in that specific setup. Configuration of products to fit the requirements of a specific market requires knowledge about the product brands that actors offer the service for. Also, configuration of products in large volumes requires resources for warehousing, logistics, as well as a continental presence (Distributor 1, 2014). This is done in order to be able to receive, store and deliver the configured products, and serves the different regions where the product suppliers' customers are.

Table 5 Actors involved: Configuration

	Case company	Distributors	System integrators	Resellers	Installation firms	Operation firms	ISVs	TPs	Consultants	RMA/EM partners	End customers
Offered by	No	Yes	Yes	Yes	Yes	No	No	No	Yes	No	No
Offered to	No	Yes	Yes	Yes	No	No	No	No	No	No	Yes

4.3.3 Installation

One of the most abundant services is installation, which is the process of installing and configuring a system, resulting in that the end customer is able to use it when the installation is finished (System integrator 1, 2014; System integrator 2, 2014). The process consists of mounting the products in the decided locations, setting up the infrastructure products that have been decided upon, and finally configuring the system so that the core products and infrastructure product are connected. This is a service currently provided by resellers and system integrators, towards both business and private end customers. The system integrators either have in-house competence in conducting installations, or they choose to outsource it to the installers (End customer 2, 2014; System integrator 3, 2014). Resellers almost exclusively outsource this service to installers (Reseller 1, 2014). When they outsource the installation process it is mainly to specialized installation firms which they have agreements with. Based on the customer needs, a system integrator or reseller may have agreements with several installation firms, specialized in installations of different systems. This allows them to perform competitive tendering, and offer the end customer a system within their price range (End customer 1, 2014; End customer 7, 2014; System integrator 7, 2014). When the end customers possess knowledge regarding an actor providing installation, it is common that they are contacted directly (End customer 2, 2014; End customer 3, 2014; End customer 7, 2014, End customer 8; 2014). For this service, it is important that the actor has a local presence in order to serve enough customers (System integrator 3, 2014). Basic knowledge in terms of

hardware, software and systems technology is important, as well as possessing the necessary equipment and tools required for the actual installation (System integrator 4, 2014). As a firm that offers installation often serves a high amount of customers, it is also necessary with an extensive financial department that can handle extensive invoicing.

Table 6 Actors involved: Installation

	Case company	Distributors	System integrators	Resellers	Installation firms	Operation firms	ISVs	TPs	Consultants	RMA/EM partners	End customers
Offered by	No	No	Yes	Yes	Yes	No	No	No	No	No	No
Offered to	No	No	Yes	Yes	No	No	No	No	No	No	Yes

4.3.4 Operation

Operating the system is one of the most basic services. As the name implies, it comprises the actual operation and use of the system. Operating the systems can be done both remotely or onsite (End customer 1, 2014; End customer 2, 2014; End customer 6, 2014; System integrator 3, 2014; Case company employee 3, 2014). Onsite operation implies that you have personnel onsite, constantly or periodically operating the system (End customer 6, 2014; System integrator 3). This is something that can be performed by many actors. End customer can, if they possess capable staff in-house, choose to do it themselves, or let the system integrator or one of their subcontractors handle the onsite operation of the system (End customer 1, 2014; End customer 2, 2014). Doing it remotely implies that the operator possesses a platform that can transfer the content of the system to a remote location (Case company employee 3, 2014). Thus, an operator is capable of operating several systems at different locations from a central operation center. The case company has developed such a platform, enabling second-tier partners to offer their customers remote operation. Remote operation is a service that has raised interest from many end customers recently, as it allows them to outsource the responsibility of operation (End customer 8, 2014).This is most often carried out by system integrators or system operation firms that have enough systems to operate so that a centralized operation center is justified financially (End customer 8, 2014; System integrator 3, 2014). Furthermore, it implies that the one responsible for operating the system has a local reach, either through subcontractors or in-house, so they can act swiftly if an incident occur. Bigger customers can also operate their systems remotely themselves, especially if it is larger enterprises that have systems at many different locations (End customer 6, 2014; System integrator 3, 2014). The requirements for offering onsite operation of the system are basic knowledge about the systems and the related technologies, together with operative staff and a local presence in order to cover a wide geographical area (End customer 2, 2014; System integrator 3, 2014). For remote operations, the need for an operative staff is smaller, as it is carried out from a central location. However, more sophisticated equipment in form of a hosting platform enabled by software is needed in addition to more in-depth knowledge about the systems and technical domains.

Table 7 Actors involved: Onsite operation

	Case company	Distributors	System integrators	Resellers	Installation firms	Operation firms	ISVs	TPs	Consultants	RMA/EM partners	End customers
Offered by	No	No	Yes	No	No	Yes	No	No	No	No	No
Offered to	No	No	Yes	No	No	No	No	No	No	No	Yes

Table 8 Actors involved: Remote operation

	Case company	Distributors	System integrators	Resellers	Installation firms	Operation firms	ISVs	TPs	Consultants	RMA/EM partners	End customers
Offered by	No	No	Yes	No	No	Yes	No	No	No	No	No
Offered to	No	No	Yes	No	No	No	No	No	No	No	Yes

4.3.5 System health monitoring

System health monitoring is another service that is regarded as an essential service in the industry (Case company employee 2, 2014; Case company employee 6, 2014). This service consists of proactively monitoring the entire system and detecting failures before they cause any problems that make the system break down. It can be failures related to all different components of the system; software, hardware or infrastructure products. These kinds of activities would increase the uptime of the systems and reduce unscheduled costs related to fixing said problems reactively. This service can be performed both onsite, which is currently the most used type, or remotely. Onsite system health monitoring consists of physically checking the system for failures, and taking measures to fix them, such as changing infrastructure products or upgrading software. This kind of service is most often included in a service agreement, and thus carried out either by the installer or the system integrator on a monthly or yearly basis, depending on the service agreement. Additionally it is performed by system operators or end customer, and these actors perform it more frequently. Remote system health monitoring implies the need for software that constantly diagnoses the system and detects failures, so that an actor is able to do it from a remote location and does not need to be physically present. Currently, these kinds of digital tools are diffused within the industry by actors that have developed their own tools (System integrator 4, 2014; Case company employee 2, 2014; Case company employee 6, 2014). Among those actors, it is mainly system integrators that account for this development. However, it is still not widely used as these tools are developed recently. When offering this service onsite, it is important to have basic knowledge about hardware, software and systems technology (End customer 1, 2014; End customer 7, 2014). Additionally, it is important to have staff dedicated to this service. This staff also needs to have a local presence in order to serve a lot of customers (System integrator 3, 2014; Case company employee 1, 2014). Basic equipment is also needed. For the remote offering of this service, more in-depth knowledge about the technology is needed together with more sophisticated equipment in form of software and platform that enables the diagnosis of the system (Case company employee 6, 2014). A dedicated staff is also needed, however to a smaller degree than for onsite maintenance, together with a database covering all the different components of the systems.

Table 9 Actors involved: Onsite system health monitoring

	Case company	Distributors	System integrators	Resellers	Installation firms	Operation firms	ISVs	TPs	Consultants	RMA/EM partners	End customers
Offered by	No	No	Yes	No	Yes	Yes	No	No	No	No	No
Offered to	No	No	Yes	No	No	No	No	No	No	No	Yes

Table 10 Actors involved: Remote system health monitoring

	Case company	Distributors	System integrators	Resellers	Installation firms	Operation firms	ISVs	TPs	Consultants	RMA/EM partners	End customers
Offered by	No	No	Yes	No	No	No	No	No	No	No	No
Offered to	No	No	No	No	No	No	No	No	No	No	Yes

4.3.6 Maintenance

Maintenance is a service that is closely related to system health monitoring. They differ in the sense that maintenance is something that is done after a problem occurs so that a system stops performing at the expected level (End customer 2, 2014; End customer 3, 2014). This service is also something that might be included in the service agreement, implying that the choice of supplier for this service most often is based on the reputation of the actor which the end customer entered the service agreement with. Depending on the extent of the service agreement, the customer might have unscheduled maintenance included for free, or pay per incident (End customer 2, 2014; End customer 7, 2014; System integrator 3, 2014). Currently, this service is mainly performed onsite, but there are actors offering remote maintenance services. For the onsite maintenance, the activities that are included are the same as for onsite system health monitoring, checking all product components, software and infrastructure products for problems and carry out the appropriate activities to get it up and running. This is often carried out by the system integrator, resellers, installers or the system operators, if the customers do not choose to do it themselves (End customer 2, 2014; End customer 3, 2014; End customer 6, 2014). This activity is at times also performed by the end customers themselves, as it does not require specific expertise (End customer 6, 2014). For remote maintenance this would imply that you have the same kind of software as for remote system health monitoring, software that can detect the failures and carry out maintenance remotely. This is not possible if there are any hardware product components or infrastructure problems that need maintenance, but it should be possible to remotely upgrade software. This service is carried out by system integrators, resellers, installers, system operators or an ISV, depending on what agreement that is made between the end customer and their supplier.

Basic knowledge about the technology is needed together with a dedicated maintenance staff with local presence if the service is to be offered onsite (End customer 2, 2014; End customer 6, 2014). Some basic equipment is also needed for this kind of service. For the remote maintenance, more in-depth technological knowledge together with more sophisticated equipment in form of software and platforms are needed (Case company employee 6, 2014). A smaller staff dedicated to maintenance with access to system specific components and databases are also required (Case company employee 11, 2014; Case company employee 12, 2014).

Table 11 Actors involved: Onsite maintenance

	Case company	Distributors	System integrators	Resellers	Installation firms	Operation firms	ISVs	TPs	Consultants	RMA/EM partners	End customers
Offered by	No	No	Yes	No	Yes	Yes	No	No	No	No	No
Offered to	No	No	Yes	No	No	No	No	No	No	No	Yes

Table 12 Actors involved: Remote maintenance

	Case company	Distributors	System integrators	Resellers	Installation firms	Operation firms	ISVs	TPs	Consultants	RMA/EM partners	End customers
Offered by	No	No	Yes	Yes	Yes	Yes	Yes	No	No	No	No
Offered to	No	No	Yes	No	No	No	No	No	No	No	Yes

4.3.7 Education

Education is another vital service in the industry today. Despite the rapid diffusion of the technology, it has yet to be fully recognized as the dominant technology in the industry. Therefore, one of the most important factors for ensuring continued adoption is to expose actors to this technology, educate them on the benefits it provides and teach them how to

successfully use it (Case company employee 13, 2014; Case Company homepage, 2014). Educational services can be offered to actors either onsite or remotely. Onsite implies physical interaction between the party that offers the education and those that receive it. It can either be at the site of where the systems are in use, at the educators own offices or any other location where a certain amount of people can attend. To hold the education at the educator's facilities is most often more attractive, as it allows for more scalability in the number of participants (Case company employee 14, 2014). Onsite education at the receiving actor's facilities is held mostly for large customer accounts as it only allows for a smaller number of participants. Onsite education is most often performed through scheduled academy classes or through breakfast meetings, conferences or industry fairs (System integrator 3, 2014; Case Company Homepage, 2014). Additionally, education can be done remotely. This implies that the education is carried out without physical interaction, i.e. online. Companies provide several online education offers, such as web-seminars or tailored e-learning programs and simulations (Case Company Homepage; 2014; Competitor Homepage 1, 2014; Competitor Homepage 2, 2014).

Education is offered by the majority of the actors in the industry, and all actors in the industry are recipients to some kind of education (Distributor 1, 2014; End customer 8, 2014; System integrator 3, 2014). Some of these educational offers are aimed towards enhancing the awareness about the newest technologies and speed up diffusion (Case company employee 13, 2014; Case Company Homepage, 2014). These are usually offered for free. There are also more detailed educational offers that aim towards certifications and ensuring that products that are used are installed and operated with the required competence (System integrator 3, 2014; Case Company Homepage, 2014). These are often, but not always charged for. The case company educates mainly actors in their partner network, and they differentiate between their partners by charging a certain partner level for education, while offering it free of charge for another partner level (Case company employee 1, 2014; Case company employee 14, 2014).

In order to carry out onsite education, an actor need to possess or develop skills in the hardware and the software that is installed, as well as in integration of the components in the system (System integrator 2, 2014; System integrator 3, 2014; System integrator 7, 2014; Case company employee 14, 2014). Additionally, an actor willing to offer onsite education should possess or acquire staff with educational capabilities. Furthermore, if willing to offer onsite education, an actor needs to have a local reach enabling the educational staff to reach customers in all areas in which the service is offered. The resources and capabilities needed in order to be able to offer education remotely differs from education onsite. Staff possessing competence in hardware, software and system integration related to the products is still needed for an actor willing to do this, but they also need to possess or develop capabilities in general software and web-development (System integrator 3, 2014; Case company employee 7, 2014; Case company employee 14, 2014). Furthermore, in order to present the material in a pedagogic manner, an actor pursuing this service need to possess or acquire staff with educational capabilities (Case company employee 7, 2014; Case company employee 14, 2014). This service could be performed from a centralized location reaching a large amount of customers, releasing the actor from the need to gather competent staff in several locations to serve the customers onsite (Case company employee 17, 2014).

	Case company	Distributors	System integrators	Resellers	Installation firms	Operation firms	ISVs	TPs	Consultants	RMA/EM partners	End customers
Offered by	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No
Offered to	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes

Table 14 Actors involved: Remote education

	Case company	Distributors	System integrators	Resellers	Installation firms	Operation firms	ISVs	TPs	Consultants	RMA/EM partners	End customers
Offered by	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No
Offered to	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes

4.3.8 New product information

Closely related to the educational offers in the industry, is the extent of new product information offered. Even though the use of the technology has diffused rapidly, the technological progress for this particular technology is also progressing rapidly (End customer 5, 2014). In order to remain in the technological forefront it is therefore of importance to keep innovating. This means to continuously develop new products as well as enhancements to incumbent products. For the market to adopt these products and enhancements, the information regarding these need to be shared (End customer 6, 2014; Customer Survey, 2013). This is done through new product information, mainly by the actor that has developed the new product or the enhancement (End customer 6, 2014; Internal documents, 2014). This new product information can be carried out either onsite or remotely, neither of which are charged for by the actor offering them (End customer 8, 2014; System integrator 2, 2014).

Onsite new product information is mostly the same as for educational offers, with physical interaction such as meetings or conferences. They can also be offered remotely, through industry magazines, newsletters, e-catalogues and emails (System integrator 3, 2014; Case Company Homepage, 2014). This is also something that is offered by most actors in the industry, independent of their function or focus area (Distributor 1, 2014; End customer 8, 2014; System integrator 3, 2014; Case Company homepage, 2014). However, in the context of the case company, their limited interaction with end customers forces them to focus mostly on their key accounts when offering new product information (Case company employee 13, 2014). However, this is not a service the case company explicitly offers, but it is most often viewed as an add-on service to sell products to their largest customers. In order to offer new product information onsite, an actor needs to possess or develop competence regarding the hardware, software and systems they sell (Case company employee 14, 2014). Additionally, staff able to transfer the knowledge peer-to-peer, both regarding the product specifications and the value it adds to their customer, is required to efficiently conduct new product information onsite. Furthermore, a continental presence, at minimum is necessary (End customer 8, 2014; Case company employee 14, 2014). It is not feasible to reach customers in remote locations, neither is it possible to make customers travel significantly to receive new product information at the facilities of a supplier, if distant.

Remote new product information does not require staff as competent in transferring knowledge peer-to-peer as onsite new product information. However, in addition to what is required for conducting new product information services onsite, remote new product information do require capabilities in marketing material development and in web-content development (End customer 5, 2014; End customer 8, 2014; System integrator 3, 2014). Most often actors in the industry provide their customers with new product information remotely

and continuously through their website, newsletters or ads in industry magazines, where capabilities in these areas are a necessity.

Table 15 Actors involved: Onsite new product information

	Case company	Distributors	System integrators	Resellers	Installation firms	Operation firms	ISVs	TPs	Consultants	RMA/EM partners	End customers
Offered by	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No
Offered to	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes

Table 16 Actors involved: Remote new product information

	Case company	Distributors	System integrators	Resellers	Installation firms	Operation firms	ISVs	TPs	Consultants	RMA/EM partners	End customers
Offered by	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No
Offered to	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes

4.3.9 Support

Another service that is widely offered in the industry is the support service (End customer 2, 2014; Reseller 1, 2014; System integrator 3, 2014; Case company employee 4, 2014). The majority of the actors offer this service to the majority of their customers (System integrator 2, 2014; System integrator 3, 2014). However, the support function is most often seen as a necessary add-on to sell products and is not receiving attention within the organization of several actors (Reseller 1, 2014). The support service can be used both proactively and reactively. Proactively is to use the support service in order to acquire knowledge about the different systems, system components and application (Case company employee 4, 2014; Case company employee 5, 2014). However, the reactive use is the most common, when the support is contacted in order to solve a product of technical nature (Case company employee 4, 2014; Case company employee 5, 2014; Case company employee 11, 2014; Case company employee 12, 2014).

The support service is performed remotely, and can be offered on different platforms, but the most common ways are by phone, online chat or online forums where experience can be shared and accessed freely by the customers (System integrator 3, 2014; Case company employee 4, 2014). Similar for both online chat and phone is that the initiator is immediately set in contact with a skilled and technically knowledgeable person. This service is something that many end customers use as a free option to paying a firm for diagnosing and carry out maintenance on the systems (Case company employee 9, 2014). They have the option to use the support of their direct suppliers, depending on the nature of the problem, or go directly to the support service of the firm producing the product. In context of the case company, their support function is free of charge and is extensively used by both end customers and their ecosystem partners. For this service, it is vital to have a staff that is service-minded and dedicated to the support activities (Case company employee 4, 2014). Also, it is of importance that they possess deep product and technology knowledge, with access to all the tools necessary to provide support, mainly over phone or online chat. Additionally, databases over the most recurring deficiencies and problems are important (Case company employee 11, 2014; Case company employee 12, 2014).

Table 17 Actors involved: Support

	Case company	Distributors	System integrators	Resellers	Installation firms	Operation firms	ISVs	TPs	Consultants	RMA/EM partners	End customers
Offered by	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No
Offered to	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes

4.3.10 Return merchandise authorization

Return merchandise authorization (RMA) is the service of refunding, replacing or repairing a product, and is carried out when a failure occurs within the system that is beyond fixing with mere maintenance efforts or through the support service (Case company employee 11, 2014; Case company employee 12, 2014). In the context of the case company, this process consists of several phases and includes different actors. The first phase of this process is when a product breaks down and the firm responsible for the health of the system is contacted, typically a system integrator or the firm that has installed the system. When the conclusion is reached that it cannot be fixed onsite, the provider of the product is contacted. In the context of the case company, they have customer-service technicians that troubleshoot the product. If the issue cannot be solved, they send out a replacing product and request that the product is sent in for diagnosis and repair. The product is sent to a dedicated RMA partner, who troubleshoots it to find and solve the root cause. If the problem is solved and the product repaired, it is sent to a central storage before going out to a customer. The customer does not necessarily need to be the same customer that sent in that unique product. If the RMA partner is unable to find and solve the root cause, the product is sent to an equipment manufacturing (EM) partner. An EM partner is a company specialized in specific product families. They diagnose it trying to find the root cause and solve the issue. If they are able to solve it and repair the product, it is sent to the central storage. Even though this process is described from the viewpoint of the case company, the process is similar for TPs as well. They offer it toward the end customers and the second-tier partners, while the RMA and EM partners offer the service towards the case company and TPs. There is a large amount of firms providing RMA services, but the quality of their services differ widely.

How the cost of this process is allocated depends on several factors (End customer 2, 2014; End customer 3, 2014; End customer 7, 2014). If incidents are not included in the initial service agreement, the end customer bears the cost of investigating the problem and deciding to send the product forward to an RMA partner. Who is bearing the costs of the next steps in the process, depends on whether or not the warranty period of the product has expired (End customer 2, 2014; Case company employee 11, 2014; Case company employee 12, 2014). If the warranty period has expired, an in-depth investigation of the problem is carried out by the RMA partner in order to find out how and why the problem occurred in order to assess who should bear the cost (Case company employee 11, 2014; Case company employee 12, 2014). However, the case company has traditionally been highly generous with replacements and reparations, not charging the responsible actor regardless of the warranty period (Case company employee 11, 2014; Case company employee 12, 2014). In order to offer this service, it is essential that the actor possesses continental facilities that enables storing of products together with reparation. In order to carry out repair, it is also necessary that the staff possess both product-specific and technology-specific knowledge. Logistics and supply chain capabilities are also necessary when offering RMA.

Table 18 Actors involved: Return merchandise authorization

	Case company	Distributors	System integrators	Resellers	Installation firms	Operation firms	ISVs	TPs	Consultants	RMA/EM partners	End customers
Offered by	Yes	No	No	No	No	No	No	Yes	No	Yes	No
Offered to	Yes	No	Yes	Yes	No	No	No	Yes	No	No	Yes

4.3.11 Analytics

Another service is analytics, which is closely related to the traditional operation of the systems. This is the service of operating the system solely based on real time occurrences, or as a complement to the traditional operation of the system (System integrator 3, 2014; Case company employee 8, 2014). This kind of service is enabled by software, and does not require constant operation of the system and its contents. The software enables the system to detect certain occurrences and the system sends out signals based on these occurrences. Thus, it is not required with constant operation, but only to act when the system detects occurrences that is worth acting on. This is something that is offered by the ISVs to the system integrators and resellers, or from the system integrators, resellers or subcontractors towards end customers (Case Company homepage, 2014). However, it can also be offered directly as a product in the form of software from the ISVs, so that the end customers can chose to use it themselves. Also, the case company develops their own analytics software, which is offered for free through their website. The quality of these applications has yet to reach their full potential, which has resulted in that the adoption of analytics has been slow (Case company employee 13, 2014). However, benefits with analytics are that it allows a user to react when an unexpected event occurs, without the cost and need for constant operation (End customer 3, 2014; End customer 5, 2014). In order to offer this service, an analytics platform together with in-depth knowledge about hardware, software and systems technology are required (System integrator 3, 2014; Case company employee 8, 2014). In addition, a small staff specially dedicated to the operation of the analytics is necessary.

Table 19 Actors involved: Analytics

	Case company	Distributors	System integrators	Resellers	Installation firms	Operation firms	ISVs	TPs	Consultants	RMA/EM partners	End customers
Offered by	Yes	No	Yes	Yes	Yes	Yes	Yes	No	No	No	No
Offered to	No	No	Yes	Yes	No	No	No	No	No	No	Yes

4.3.12 Business intelligence

Business intelligence is an umbrella term that includes the applications, infrastructure, tools and best practices that enable access to and analysis of information to improve and optimize decisions and performance (Gartner, 2013). In the industry of the case company, business intelligence is mainly discussed in the sense of software applications used to add commercial functionality to the products (Case Company Homepage, 2014). However, these software applications are often offered as software packages, not as services. These applications can be viewed as expensive, with low compatibility with existing platforms and products designed to operate it smoothly, and difficult to aggregate data (End customer 6, 2014; End customer 8, 2014). Business intelligence as a service implies that an actor collect and aggregate data and provide a customer with a report or a database from which the customer would be able to access the compiled data (System integrator 4, 2014). It is the ISVs that provide system integrators with business intelligence software, enabling them to provide this service. This service is purchased mainly by end customers (End customer 1, 2014; End customer 2, 2014).

Alternative solutions to business intelligence as a service has traditionally been to allocate a resource into monitoring customer behavior manually (End customer 5, 2014; End customer 6, 2014). This is however not especially cost-efficient. When offering this service it is important with in-depth knowledge related to hardware, software and systems technology (End customer 5, 2014; System integrator 4, 2014). Additionally, aggregation-specific knowledge and staff is required, together with the equipment in the form of software and platforms that enable the functionalities.

Table 20 Actors involved: Business intelligence

	Case company	Distributors	System integrators	Resellers	Installation firms	Operation firms	ISVs	TPs	Consultants	RMA/EM partners	End customers
Offered by	No	No	Yes	No	No	No	Yes	No	No	No	No
Offered to	No	No	Yes	No	No	No	No	No	No	No	Yes

4.3.13 Warehousing

Warehousing is a service where an actor holds stock for suppliers in exchange for remuneration (Distributor 1, 2014; Distributor Homepage 2, 2014; Distributor Homepage 3, 2014). These actors are most often specialized in a certain industry, keeping stock for several suppliers selling similar or complementary products. The main function of an actor holding stock is to provide products to customers of the suppliers in a location separated from where the suppliers are able to swiftly reach these customers (Distributor 1, 2014). In addition, warehousing could be combined with distribution, sales support, technical support and business intelligence services, depending on what services that are provided by the stock holding actor. For a distributor, scale is important, hence the larger their operations, the more influence they are able to have over both their suppliers and customers (Case company employee 9, 2014). However, most often one market is served by two or more distributors offering a similar product mix (Case Company homepage, 2014).

The main providers of warehousing services in the case company's industry are the distributors of hardware products, the first tier of the distribution network, offering it towards the case company, other producing firms and TPs (Case company employee 1, 2014). The second tier offers warehousing towards their subcontractors and end customers, as they always keep a stock of products ready, but not to the same extent as the actual distributors (System integrator 3, 2014). Also, TPs offer warehousing of hardware products. As a result of the business model and sales model that the case company applies, they do not offer any warehousing services as they are solely producing their products based on orders (Case company employee 1, 2014). The remainder of their logistic needs is outsourced to third-party logisticians (Internal documents, 2014). An actor seeking to offer warehousing needs to possess or develop a wide range of resources and capabilities (Distributor 1, 2014). Investments in facilities covering several regions, infrastructure for supply chain management, and staff with logistics competence is a necessity. Furthermore, in the case company's industry, actors offering warehousing are inclined to accept low margins and to give customers credit (Distributor 1, 2014; Case company employee 1, 2014). This is both a large financial commitment and a risk for the actor willing to provide warehousing, but a pre-requisite for actors pursuing this service (Distributor 1, 2014).

Table 21 Actors involved: Warehousing

	Case company	Distributors	System integrators	Resellers	Installation firms	Operation firms	ISVs	TPs	Consultants	RMA/EM partners	End customers
Offered by	No	Yes	Yes	Yes	No	No	No	Yes	No	No	No
Offered to	Yes	No	No	No	Yes	Yes	No	Yes	No	No	Yes

4.3.14 Financial services

Financial services consist of giving credit to customers, either allowing them to purchase products without having to pay up-front, providing businesses with seed funding or signing loan agreements where the customer pays interest and amortization until the loan is repaid (Distributor 1, 2014; Almi Homepage, 2014; SEB Homepage, 2014). Also, product warranties are seen as financial services, allowing a customer to purchase less risk of product breakdowns and system failures (Case company employee 4, 2014; Case company employee 5, 2014). Which kind of financial service that is provided depend on which actor that is assumed. Actors providing warehousing services most often allow customers credit as a part of their services, while funding and loans are provided mainly by financial institutions such as banks and investors (Distributor 1, 2014; Almi Homepage, 2014; SEB Homepage, 2014). Product warranties are mainly provided by firms producing products, such as the case company, ISVs and TPs towards end customers (Case company employee 4, 2014; Case company employee 5, 2014). The main resources for providing financial services are financial assets and staff with experience from handling financial services (Hammar, 2012; SEB Homepage, 2014). These resources are required to make the initial investments, and allow an actor to start providing this service.

Table 22 Actors involved: Financial services

	Case company	Distributors	System integrators	Resellers	Installation firms	Operation firms	ISVs	TPs	Consultants	RMA/EM partners	End customers
Offered by	Yes	Yes	No	No	No	No	Yes	Yes	No	No	No
Offered to	Yes	No	No	No	No	No	No	Yes	No	No	Yes

4.3.15 Renting and leasing

An option to purchasing a product or a system of components is to rent or lease it (End customer 5, 2014; Reseller 1, 2014). Renting and leasing are similar in that both options result in that an actor is able to reap the benefits of having the products or system of components, without having to take the risks associated with the ownership. The difference between renting and leasing is that renting most often is for a short period of time. Also, when leasing a system, the deal most often includes a service agreement and the products depreciate during the leasing period. Renting and leasing is provided as a service by both system integrators and resellers, towards end customers (End customer 5, 2014; Reseller 1, 2014; System integrator 3, 2014). There are services available in the industry where an end customer can have a product set up for a short period of time, and there are services available where the end customer can have the system of products set up at their venue for as long as one may want (System integrator 3, 2014). Earlier, this has been offered as a mean during certain circumstances to make sure that an end customer do not switch supplier (End customer 5, 2014). However, currently a growing number of end customers are choosing leasing or renting, as the majority do not want to take the risk of their system breaking down (End customer 8, 2014; Case company employee 9, 2014). They want to purchase a total solution where a system integrator owns the entire system (System integrator 3, 2014). When offering

this service, it is important to keep a stock of products available at all times; thus warehousing facilities are essential for leasing or renting (Case company employee 1, 2014). Logistics capabilities and extended staff dedicated to the financials is also important for this service.

Table 23 Actors involved: Renting and leasing

	Case company	Distributors	System integrators	Resellers	Installation firms	Operation firms	ISVs	TPs	Consultants	RMA/EM partners	End customers
Offered by	No	No	Yes	Yes	No	No	No	No	No	No	No
Offered to	No	No	No	No	No	No	No	No	No	No	Yes

5 Analysis

This section will provide an analysis of the empirical data presented in section *4 Empirical data,* by applying the theoretical framework presented in section *3 Theoretical framework.* A critical evaluation of all the identified services will be presented, including an internal and external analysis, together with the implications for the dynamics of the business ecosystem. For each service, the internal and external analyses will be summarized in two separate tables. Then a discussion follows regarding what services that should be excluded, kept or added to the case company's service portfolio, together with a description of how the case company should design their offerings for the different services. The section ends with a more in-depth description of the process which the case company should take towards reaching a stronger position for capturing downstream value and how the service offering should be packaged and offered towards the targeted actors.

5.1 Service evaluations

This section comprises the analysis of each of the identified services. System design, operation, system health monitoring, maintenance, education and new product information have been broken down from into onsite or remote, due to that these services differ significantly in characteristics. Each analysis starts with an evaluation of the fit between the resources, capabilities and competencies residing in the case company, and what is required for the service. Then an external analysis follows, both from an industry competition perspective for each service, and how it will affect the relationships with the case company's partners in the business ecosystem.

5.1.1 Onsite system design

In terms of physical capital resources (Grant, 1991) there are no specific resources that stands out in relation to this service. However, for human capital resources, it is very important to have technical knowledge within the domains of hardware, software and systems technology, in order to develop an integrated solution fulfilling the requirements for this service (System integrator 3, 2014). Furthermore, it is important that the employees of the actors offering the service have specific system-design skills and experience. All these skills reside in the case company, technical competence in abundance, and system-design specific skills and experience. The latter is due to their sales engineering function, however to a minor extent as this function is limited to their key accounts (Case company employee 13, 2014; Case company employee 15, 2014). For organizational capital resources and capabilities (Grant, 1991) it is required that the organizational structure makes a provider of this service capable of visiting the site physically (System integrator 3; 2014). This organizational resource or capability is something that the case company currently lacks, and it would require a comprehensive restructuring if they are to achieve it (Case company employee 16, 2014). Therefore, in terms of the resource based view and core competencies (Grant, 1991; Barney,

1991; Prahalad & Hamel, 1990) stating that strategies and efforts of a company should be based on their core resources, capabilities and competencies, it is not advisable that the case company put efforts into this service to a larger extent than they already do.

Table 24 Resource based view analysis: Onsite system design

	Physical capital resources	Human capital resources	Organizational resources	Capabilities
Onsite system design	Fit	Fit	No fit	No fit

The rivalry among existing actors for this service is high (Porter, 2008). This is due to that there are several specialized actors offering system design, ranging from large system integrators serving global end customers, to local consultants and system integrators competing for the local end customers (Case company employee 1, 2014). Also, several resellers and installation firms include onsite system design in their offering, confirming the high rivalry. Bargaining power of suppliers is medium, as onsite system design is not dependent on suppliers, but there are certain digital tools provided by product suppliers that allows for support in system design (Internal documents, 2014; Case Company homepage, 2014). Not all product suppliers allow actors conducting system design to use their tools. Additionally, suppliers might need to educate actors in their product functionalities. The bargaining power of customers is high, as they have a large amount of suppliers to choose from (Case company employee 1, 2014; Internal documents, 2014). Also, several of the largest end customers possess the resources and competences in-house to conduct onsite system design, further increasing the bargaining power of customers (End Customer 4, 2014; End Customer 6, 2014; End Customer 8, 2014). The threat of new entrants is low, as there are high barriers to entry for this service. Difficulties in acquiring the skills necessary and close customer relations are two barriers for actors trying to enter the market for this service (End Customer 4, 2014; System integrator 3, 2014). The threat of substitute products or services is medium. As mentioned earlier, there are tools allowing buyers to conduct the system design themselves (Case Company Homepage, 2014). However, the risks associated with designing a system without profound competence in how to do it, are high (System integrator 3, 2014). Therefore, those tools are not sufficient to ensure a proper system design, lowering the threat of such substitutes.

Table 25 Porter's five forces analysis: Onsite system design

	Rivalry among existing actors	Bargaining power of suppliers	Bargaining power of customers	Threat of new entrants	Threat of substitutes
Onsite system design	High	Medium	High	Low	Medium

In terms of the business ecosystem (Williamson & Meyer, 2012) that the case company operates in, onsite system design is something that to a large are left to their partners. When this service is offered by the case company, it is usually done as a differentiated service for their key accounts as a way of retaining customers, offered free of charge. As for their partners, this is a highly valuable service offering for them in order to be awarded contracts (System integrator 3, 2014). These partners, mainly system integrators, are also the ones that actually purchase the case company's products. Thus, offering this service to a larger extent than they already do could be perceived as intruding on their partners' business and decrease their competitive advantage. Additionally, this part of the ecosystem is very dense and characterized by close relationships and interconnectedness between actors (Ahuja, 2000). It could therefore hurt the case company's reputation if they choose to offer this service, and be

detrimental to both the business ecosystem and the case company (Williamson & Meyer, 2012).

5.1.2 Remote system design

For this service, certain physical capital resources (Grant, 1991) are needed in order to carry out this service; digital design tools and site-specific details (System integrator 3, 2014). The former is possessed by the case company, while the latter is easy to acquire. As this service is closely related to onsite system design, the human capital resources required are the same (Grant, 1991); technical competence in relation to hardware, software and systems technology, in addition to system design specific skills and experience (System integrator 3, 2014). This is something that resides in the case company, in form of capable employees and the sales engineering function, but to varying degrees (Case company employee 15, 2014; Case company employee 16, 2014). There are no specific organizational capital resources (Grant, 1991) needed for this service, as it can be offered remotely. In terms of the literature (Barney, 1991; Grant, 1991; Prahalad & Hamel, 1990) stating that efforts and strategic decisions should fit the resources, capabilities and competencies of the company, this speaks in favor of the case company offering this service to a larger extent than they already do.

Table 26 Resource based view analysis: Remote system design

	Physical capital resources	Human capital resources	Organizational resources	Capabilities
Remote system design	Fit	Fit	Fit	Fit

The rivalry among existing actors for remote system design is low (Porter, 2008). This is mainly due to two factors. First, system design often requires a site evaluation, which traditionally has been performed onsite (System integrator 3, 2014; Case company employee 14, 2014). Second, there are tools available to assist in system design decisions, but these are not easily used without system design competence, creating barriers for end customers to use these tools themselves (Case Company Homepage, 2014). These factors have led to low attractiveness of remote system design services and therefore low rivalry. Bargaining power of suppliers is regarded as medium. It is possible for actors to conduct remote system design without depending on suppliers, but most often the actors providing system design requires specific product or system knowledge, which they acquire from suppliers (Case company employee 9, 2014). Bargaining power of customers is low. This is because most end customers do not possess the competence of conducting system design themselves and there are few actors providing remote system design (End Customer 1, 2014; End Customer 5, 2014; End Customer 8, 2014). Threat of new entrants is medium as there are competent actors that are able to perform remote system design, but currently there are few initiatives towards remote system design offerings (Competitor Homepage 1, 2014; Competitor Homepage 2, 2014; Competitor Homepage 3, 2014). The main threat is substituting services, which is regarded as high. Onsite system design is the substitute currently being used the most (Case company employee 9, 2014; Case company employee 14, 2014). Also, informative websites and video tutorials function as substitutes, allowing non-professional to perform system design (Case Company Homepage, 2014).

Table 27 Porter's five forces analysis: Remote system design

	Rivalry among existing actors	Bargaining power of suppliers	Bargaining power of customers	Threat of new entrants	Threat of substitutes
Remote system design	Low	Medium	Low	Medium	High

The actors providing this service are the same actors providing onsite system design in the business ecosystem (Williamson & Meyer, 2012). It is performed mainly by the second-tier partners and consultants. When it is offered by the case company, it is usually as a free of charge service to their key accounts. It can also be done more indirectly through some digital tools and through informative product descriptions (Case Company Homepage, 2014). However, this service is an important part of their partners business, and offering such a service can be viewed as intrusive and damage the relationship (Williamson & Meyer, 2012). Additionally, the part of the ecosystem that entails this service is tightly connected and can result in a damaged reputation for the case company, if they choose to start offering this service to a greater extent (Ahuja, 2000; Williamson & Meyer, 2012).

5.1.3 Configuration

Configuration is a service the case company already provides (Case company employee 1, 2014). However, this is in a small scale and is not explicitly offered or advertised, and only regarding product-specific configuration (Internal documents, 2014). They do possess the human capital required for this service, and have deep knowledge regarding their own product brand (Grant, 1991). What they do not possess is product-specific knowledge regarding their competitors' products, which inhibits them to perform configuration on other products than their own (Case company employee 7, 2014). Furthermore, the physical and organizational resources associated with configuration are built for serving distributors, not the second-tier partners (Case company employee 1, 2014; Case company employee 17, 2014). In order to start offering configuration as a service to a large amount of customers, huge investments in physical capital and organizational resources are required (Distributor 1, 2014; Grant, 1991). They would need to build warehouses in several different regions and invest in logistics infrastructure, completely shifting their allocation of investment funds (Case company employee 16, 2014). Therefore, it is not suggested that the case company pursues configuration services (Grant, 1991; Barney, 1991; Prahalad & Hamel, 1991).

Table 28 Resource based view analysis: Configuration

	Physical capital resources	Human capital resources	Organizational resources	Capabilities
Configuration	No fit	No fit	No fit	No fit

The rivalry among existing actors for configuration is high (Porter, 2008). This is due to two things. First, there are many actors able, and willing, to offer this service (Distributor 1, 2014; Case company employee 17, 2014). Second, there are firms specializing in this service, but also firms offering it as an add-on in order to sell more products, resulting in high exit barriers. The bargaining power of suppliers is high. The supplier industry is more concentrated than the industry where actors conducting configuration is, and as many suppliers have the capabilities to conduct configuration themselves they don't depend on configuration actors for their revenues (Case company employee 1, 2014). The bargaining power of customers is medium. The configuration is a service that is fairly standardized and buyers face few switching costs in changing provider (Case company employee 17, 2014). However, there is a large amount of actors willing to purchase the products and it is difficult for the buyers to integrate backwards and conduct this service themselves (System integrator 7, 2014). Furthermore, the threat of new entrants is regarded as medium. The entry barriers are high if an actor pursuing configuration does not possess product-specific competence (Case company employee 17, 2014). If they do, the entry barriers are lower. Also, in such operations, supply-side economies of scale are of great importance, and actors not enjoying

the cost advantages related to it are not likely to remain profitable. The threat of substitutes is low, as there are no products or different services that enable the same outcome.

Table 29 Porter's five forces analysis: Configuration

	Rivalry among existing actors	Bargaining power of suppliers	Bargaining power of customers	Threat of new entrants	Threat of substitutes
Configuration	High	High	Medium	Medium	Low

From the perspective of the business ecosystem (Williamson & Meyer, 2012), this service is more fragmented and divided among several actors. Some of the activities are carried out by the case company, some by distributors, and some of them by the second tier; system integrators, installation firms or operation firms (Distributor 1, 2014). The common denominator for all these is that configuration is something that is not seen as a valuable business by any of the actors, but more of a necessity in order to meet requirements either regulated by law or from the end customers. From this perspective, a move towards increased configuration offerings from the case company would therefore not be viewed as hostile by their partners, as it would enhance their efficiency instead of intruding on their revenues.

5.1.4 Installation

The physical resources (Grant, 1991) required for this service are mainly equipment related to the installation (System integrator 4, 2014). This is not currently possessed by the case company, and it would require extensive investments in order to acquire it. As for human capital resources, a basic technical knowledge regarding hardware, software and systems technology are required, in addition to specific knowledge and skills related to integration of both core and infrastructure products (System integrator 4, 2014). The technical knowledge resides in the company in abundance, but not the integration specific skills, though it is not hard to acquire (Case company employee 15, 2014). As for the organizational capital resources, it is vital that the organizational structure facilitates for a local presence so it is easy and efficient to visit installation sites physically. This is something that the company does not possess, and it would require major changes if they where to adapt to it (Case company employee 16, 2014). This service is therefore something that is not a good fit with the internal resources, capabilities and competencies residing in the case company, and they should therefore not put more effort into it (Grant, 1991; Barney, 1991; Prahalad & Hamel, 1991).

Table 30 Resource based view analysis: Installation

	Physical capital resources	Human capital resources	Organizational resources	Capabilities
Installation	Fit	Fit	No fit	No fit

In relation to the framework of Porter (2008), the rivalry among existing actors is high for this service. This is because the market is crowded with actors that are mainly competing on price (End Customer 1, 2014; End Customer 7, 2014; System integrator 7, 2014). Also, installation is characterized by low supplier bargaining power. This is because there are a large amount of actors supplying products for this service, resulting in cheaper and more commoditized technology. Furthermore, suppliers are not differentiating their offers sufficiently to lock in customers, resulting in low supplier bargaining power (Case company employee 1, 2014; Case Company Homepage, 2014). For the customer bargaining power, this is deemed as medium, because there is often an official tendering with several actors competing for the service. However, customers do not always possess in-depth knowledge about the installation

process, and the decision is based upon recommendations, price, and previous experiences (End Customer 2, 2014; End Customer 3, 2014; End Customer 7, 2014; End Customer 8, 2014). As for the threat of new entrants for the installation service, it is deemed as low. This is because reputation, relationships and economies of scale and scope serves as entry barriers for new players seeking to enter the market (End Customer 2, 2014). For the substitutes, there are no direct substitutes to the installation service, therefore it is deemed as low.

Table 31 Porter's five forces analysis: Installation

	Rivalry among existing actors	Bargaining power of suppliers	Bargaining power of customers	Threat of new entrants	Threat of substitutes
Installation	High	Low	Medium	Low	Low

In terms of the business ecosystem (Williamson & Meyer, 2012) that the case company operate in, the installation is carried out by the system integrators, or possible by their subcontractors in the form of installation firms (End Customer 1, 2014; End Customer 2, 2014; End Customer 7, 2014; System integrator 3, 2014). This leads to that if the case company starts offering this service, it can be perceived as a hostile move by their partners, and thus be detrimental for the business ecosystem (Williamson & Meyer, 2012). The density and interconnectedness could also lead to a damaged reputation for the case company (Ahuja, 2000). From a business ecosystem perspective, the case company should therefore stay out of this market if they want to maintain the relationships with the actors in the second tier of the distribution network.

5.1.5 Onsite operation

As for this service, the physical capital resources (Grant, 1991) needed is mainly supporting infrastructure products that are not directly related to the system (End Customer 2, 2014). Even though the company does not possess such equipment, their financial resources make it easy for them to acquire it if needed. In terms of human capital resources, offering such a service would require basic technological knowledge in order to be able to do minor modifications, in addition to basic operative knowledge (End Customer 2, 2014; System integrator 3, 2014; Grant, 1991). This technical knowledge resides in abundance in the case company, and the operative knowledge is easy to acquire if it is desired. For the capabilities and organizational resources (Grant, 1991), it is vital to have employees that can be stationed on the operative site for a longer period of time, together with an organizational structure that facilitates for local presence (End Customer 6, 2014; System integrator 3, 2014). None of these is something that the company possesses, or views as vital for their core business, in terms of resources and capabilities that should guide their efforts and strategic directions (Grant, 1991; Barney, 1991; Prahalad & Hamel, 1990).

Table 32 Resource based view analysis: Onsite operation

	Physical capital resources	Human capital resources	Organizational resources	Capabilities
Onsite operation	Fit	Fit	No fit	No fit

In relation to the Porter's five forces framework, the rivalry among existing actors for onsite operation is medium (Porter, 2008). This is because even though there are a lot of actors in the industry, a firm offering onsite operation often has agreements with a system integrator, which is the actor that is awarded a contract (End Customer 1, 2014; End Customer 2, 2014). The supplier bargaining power for this service is therefore high. The customer bargaining

power is regarded as medium. This is due to that onsite operation most often is part of the contract that is awarded to a supplier delivering a complete system solution, but contradicted by that the majority of end customers want to perform the onsite system operation themselves (End Customer 1, 2014; End Customer 2, 2014; End Customer 7, 2014). The threat of new entrants is considered to be medium, mainly because of the reputation and relationship barriers that exists between onsite operators and their contractors. As for substitutes, there are many technology-enabled substitutes to this service. The possibility of operating the system remotely, but also to use analytics as a way of reporting on real-time occurrences, leads to that substitute for this service is high.

Table 33 Porter's five forces analysis: Onsite operation

	Rivalry among existing actors	Bargaining power of suppliers	Bargaining power of customers	Threat of new entrants	Threat of substitutes
Onsite operation	Medium	High	Medium	Medium	High

From a business ecosystem perspective (Williamson & Meyer, 2012), this service is often carried out by the second tier of the distribution network, the system integrators, or their subcontractors in form of system operation firms (Case company employee 4, 2014; Internal Documents, 2014). Especially for system operation firms, this is where the majority of their revenues are generated, and if the case company chose to move into this service it would be viewed as hostile and intrusive by all the partners of the business ecosystem that is related to this service (End Customer 2, 2014; End Customer 1, 2014; Ahuja, 2000; Williamson & Meyer, 2012).

5.1.6 Remote operation

In terms of physical capital resources for this service (Grant, 1991), equipment in form of software, enabling remote streaming of content is needed (End Customer 2, 2014; System integrator 3, 2014). This is something that the case company has already developed (Case company employee 3, 2014). In terms of human capital resources (Grant, 1991), capable staff in knowledge hardware, software and systems technology are needed, together with operative skills related to the systems. The former is possessed by the company, but not the latter. However, as the operations would be centralized, it is something that is easier to acquire for the company than other options, such as onsite operation. Organizational resources in terms of local reach are not necessary (Grant, 1991; System integrator 4, 2014). An actor willing to provide this service is able to act from a centralized unit. However, a close relationship with local firms specializing in reach-outs is necessary, which the case company currently does not possess. Such a relationship is however easy to initiate, as many actors provide those services.

Table 34 Resource based view analysis: Remote operation

	Physical capital resources	Human capital resources	Organizational resources	Capabilities
Remote operation	Fit	Fit	Fit	Fit

In relation to the framework of Porter (2008) the rivalry among existing actors for this service is deemed as low. This is mainly because of the conservative mindset in the industry leading to that the offer has not been widely used or offered before (Case company employee 3, 2014; End Customer 4, 2014).However, the demand for remote operation has increased, but as there are requirements for scale in order to stay profitable, not many actors have started to offer it (System integrator 3, 2014; End Customer 8, 2014). Bargaining power of suppliers is

regarded as medium. Suppliers are providing the digital tools needed, but this is mediated by the lacking customer contact. The same goes for the bargaining power of customers. This is because they have other options to choose from which mediate the value of the offer. The threat of new entrants is deemed as low, much because the service is characterized by high entry barriers such as reputation and relationships. The threat of substitutes is high, as the options to remote operation are onsite operation, physical presence and operation without actually operating the content of the systems manually, but through analytics of real-time occurrences (End Customer 2, 2014; End Customer 1, 2014).

Table 35 Porter's five forces analysis: Remote operation

	Rivalry among existing actors	Bargaining power of suppliers	Bargaining power of customers	Threat of new entrants	Threat of substitutes
Remote operation	Low	Medium	Medium	Low	High

In terms of the business ecosystem (Williamson & Meyer, 2012) that the case company operates in, this service is similar to onsite operation. It is carried out by system integrators or installation firms. Thus, the majority of the revenues that these actors receive stems from remote operation. Therefore it would be intrusive if the case company were to offer such a service, and harm the business ecosystem and damage the reputation of the case company (Ahuja, 2000; Williamson & Meyer, 2012).

5.1.7 Onsite system health monitoring
In terms of physical capital resources for this service, basic equipment is necessary (End Customer 7, 2014; End Customer 2, 2014; Grant, 1991). However, such equipment is not difficult to acquire, hence not a resource hindering an actor willing to pursue onsite system health monitoring. As for the human capital resources, it is required to possess basic knowledge about the technological domains related to the products in order to troubleshoot the systems and search for deficiencies. In addition, basic operative skills are required. The former is possessed by the company in abundance, while the latter is not (Case company employee 15, 2014). However, the case company is well positioned to acquire such competence. In terms of organizational capital resources and capabilities (Grant, 1991), the structure needs to facilitate for a local reach with an extensive maintenance staff, which is something that the company does not currently possess (System integrator 3, 2014; Case company employee 1, 2014). It would also require extensive restructuring and recruitment in order to provide such a service. Therefore, in terms of the resources, capabilities and competencies that the company possesses (Grant, 1991; Barney, 1991; Prahalad & Hamel, 1990) it is not advisable that the company put effort into this service.

Table 36 Resource based view analysis: Onsite system health monitoring

	Physical capital resources	Human capital resources	Organizational resources	Capabilities
Onsite system health monitoring	Fit	Fit	No fit	No fit

In relation to the framework presented by Porter (2008), the rivalry among existing actors for onsite system health monitoring is low. This is because this service is usually carried out by either the system integrator, the installer or the onsite operator as part of a larger commitment, resulting in that little attention is given to this service (End Customer 2, 2014; End Customer 7, 2014). The bargaining power of the supplier is medium, as they are the ones that are awarded the contract, and thus allocate the activity. The bargaining power of the customer is

deemed as high, as the service seldom requires advanced equipment or skills, and can easily be carried out by themselves (End Customer 5, 2014). The threat of new entrants is regarded as high. This is mainly because the supplier that has been awarded the contract own the relation with the end customer, but also because that end customers seldom purchase onsite system health monitoring services from one specific supplier. Instead, they choose from a supplier that is able to deliver it as a part of a complete service agreement. The main substitute to onsite system health monitoring is remote system health monitoring, which is technology enabled. As this kind of service provides many benefits compared to onsite system health monitoring, the threat of substitutes is regarded as high.

Table 37 Porter's five forces analysis: Onsite system health monitoring

	Rivalry among existing actors	Bargaining power of suppliers	Bargaining power of customers	Threat of new entrants	Threat of substitutes
Onsite system health monitoring	Low	Medium	High	High	High

In terms of the business ecosystem (Williamson & Meyer, 2012), this service is usually carried out by the system integrators or the system operation firms (System integrator 3, 2014). As this service is often covered in a service agreement between the supplier and the end customer, it is part of their revenue streams (End Customer 2, 2014; End Customer 7, 2014). Therefore, from the perspective of the ecosystem, it would be harmful for the reputation and relationships of the case company if they were to offer this service, as they would intrude on a very important part of their partners revenue streams (Ahuja, 2000; Williamson & Meyer, 2012).

5.1.8 Remote system health monitoring

In terms of physical capital resources (Grant, 1991), this would require equipment in form of software that enable a remote diagnose of the entire system (Case company employee 2, 2014; Case company employee 6, 2014). The case company is able to develop such software, and is in the process of investigating such opportunities. As for human capital resources (Grant, 1991), it would require technical competence in all related domains, together with some operative skills related to operate the software (Case company employee 6, 2014). The technical competence resides in the case company's employees in abundance, while the operative skills are not difficult to acquire (Case company employee 15, 2014). Regarding organizational skills and capabilities, this service only requires one central operative station but the ability to react on deficiencies if it cannot be fixed remotely is still present (System integrator 3, 2014). The case company would be able to acquire this at a low cost, as the physical presence at a site is not extensively needed. Thus, this service fits well with the resources, capabilities and competencies residing in the case company (Grant, 1991; Barney, 1991; Prahalad & Hamel, 1990).

Table 38 Resource based view analysis: Remote system health monitoring

	Physical capital resources	Human capital resources	Organizational resources	Capabilities
Remote system health monitoring	Fit	Fit	Fit	Fit

In relation to the Porter framework (2008), the rivalry among existing actors is deemed as low. This is because of the lack of technology to carry it out sufficiently; i.e. this is currently a rare offering (Case company employee 2, 2014; Case company employee 6, 2014). As for the bargaining power of the supplier, in this case ISVs or the case company, it is deemed as

medium. This is because of the possibility they have to offer a novel opportunity, but it is moderated by the lack of customer contact that the supplier has. The bargaining power of the customers is also medium, because of the substitutes that the customer can choose between. Threat of new entrants is regarded as low, mainly because of the expertise required to develop such a tool. The threat of substitutes is also regarded as high due to the many optional ways of monitoring the health of the system, mainly onsite.

Table 39 Porter's five forces analysis: Remote system health monitoring

	Rivalry among existing actors	Bargaining power of suppliers	Bargaining power of customers	Threat of new entrants	Threat of substitutes
Remote system health monitoring	Low	Medium	Medium	Low	High

In terms of business ecosystems (Williamson & Meyer, 2012), this is something that is handled by the system integrators or system operation firms. It may be part of the firms' revenue streams through service agreements, but it is also widely used as a way of enhancing the effectiveness of their operations and thus reducing costs. In terms of the relationships and reputation that stems from the business ecosystem (Ahuja, 2012; Williamson & Meyer, 2012), an increased effort from the case company in this service can be viewed as intrusive and hostile if it is perceived to reduce the system integrators and operative firms' revenues. However, it might be beneficial both in terms of reputation and relationships if it is perceived as a way to help them enhance efficiency and reduce costs. It might however disrupt the relationships with the ISVs in the business ecosystem, that serves a similar function in assisting the system integrators in simplifying their operations and reduce their costs (Internal Documents, 2014).

5.1.9 Onsite maintenance

As for the physical capital resources (Grant, 1991) needed for this service, there are no specific resources required, except basic equipment needed for carrying out the maintenance (End Customer 2, 2014; End Customer 6, 2014). Even though the case company does not possess such equipment, it is easily acquired at a low cost. For human capital (Grant, 1991) it is necessary with basic skills and knowledge related to hardware, software and systems technology, which the case company possesses in abundance (End Customer 2, 2014; End Customer 6, 2014). As for the organizational resources required (Grant, 1991), providing onsite maintenance requires a local presence and the ability to respond swiftly to deficiencies (End Customer 2, 2014; End Customer 6, 2014). Thus, in terms of resources, capabilities and competencies (Grant, 1991; Barney, 1991; Prahalad & Hamel, 1990), this is not a good fit with what the case company excels at, and therefore they should not put effort into this service from this point of view.

Table 40 Resource based view analysis: Onsite maintenance

	Physical capital resources	Human capital resources	Organizational resources	Capabilities
Onsite maintenance	Fit	Fit	No fit	No fit

In relation to the Porter framework (2008), the rivalry among existing actors for onsite maintenance is deemed as low. This is because the maintenance is often included in a service agreement as a part of a larger commitment (End Customer 2, 2014). The supplier bargaining power is deemed as high, because it is the suppliers that are awarded the actual contract and therefore pick who carries out the maintenance. The customer bargaining power is deemed as

high, as the task does not often require expertise skills and can be carried out by the end customers themselves (End Customer 6, 2014). The threat of new entrants is regarded as low. This is because also this service is characterized by entry barriers in relation to reputation and relationships. The threat of substitutes is deemed as medium, because the options are to be more proactive in the monitoring of the systems.

Table 41 Porter's five forces analysis: Onsite maintenance

	Rivalry among existing actors	Bargaining power of suppliers	Bargaining power of customers	Threat of new entrants	Threat of substitutes
Onsite maintenance	Low	High	High	Low	Medium

The onsite maintenance is occupied by the system integrators or their subcontractors in form of system operation firms in the business ecosystem (Williamson & Meyer, 2012). This is also most often part of a service agreement which constitute a big part of their revenues (End Customer 2, 2014; End Customer 6, 2014; System integrator 3, 2014). Thus, it will be viewed as hostile if the company chooses to put more effort into this service by the system integrators and operative firms, as it intrudes on their revenue streams (Williamson & Meyer, 2012). This again will lead to a damaged reputation for the case company, and be detrimental to the business ecosystem as a whole (Ahuja, 2000; Williamson & Meyer, 2012).

5.1.10 Remote maintenance
In terms of physical capital resources (Grant, 1991) needed for this service, it is essential that the actor carrying it out has equipment in the form of software that enables remote maintenance on deficiencies (Case company employee 6, 2014). This implies technical knowledge especially for software, but also hardware and systems technology, in terms of human capital resources (Grant, 1991), together with the required skills to operate the software (Case company employee 6, 2014). All of these are resources that reside in the case company (Case company employee 6, 2014; Case company employee 15, 2014). As for organizational resources, it only requires centralized operations to run the software, but some local presence is needed if a deficiency cannot be solved remotely. Regardless, the fit between the required resources, capabilities and competencies (Grant, 1991; Barney, 1991; Prahalad & Hamel, 1990) and those that resides in the case company, makes this a good service to pursue for the case company.

Table 42 Resource based view analysis: Remote maintenance

	Physical capital resources	Human capital resources	Organizational resources	Capabilities
Remote maintenance	Fit	Fit	Fit	Fit

In relation to the Porter framework (2008), the rivalry among existing actors for this service is deemed to be low. This is because this kind of service is usually carried out onsite, and thus this service is not widely used in the industry. The bargaining power of suppliers, in this case the case company and ISVs, is deemed to be low. This is because remote maintenance is viewed as something that is not actually needed (End Customer 2, 2014; End Customer 3, 2014). The bargaining power of customers is medium, because they have other options to choose from, but put a lot of trust in their own suppliers (End Customer 1, 2014; End Customer 2, 2014). Their suppliers are usually resellers and system integrators. As for threat of new entrants, it is deemed as low, because there are entry barriers such as reputation and relationships that make it hard for new entrants to enter this market. The threat of substitutes

for this service is deemed as high. This is both due to that actors choose mainly onsite maintenance, and to that maintenance is a reactive activity that can also be substituted with system health monitoring.

Table 43 Porter's five forces analysis: Remote maintenance

	Rivalry among existing actors	Bargaining power of suppliers	Bargaining power of customers	Threat of new entrants	Threat of substitutes
Remote maintenance	Low	Low	Medium	Low	High

This service is occupied by system integrators and system operation firms in the business ecosystem (Williamson & Meyer, 2012). It can be used both as a way of charging customers and generating revenues, and a tool used to operate more efficiently and reduce costs (System integrator 3, 2014; System integrator 6, 2014). In terms of relationships and reputations (Ahuja, 2000; Williamson & Meyer, 2012) it would damage the case company to start offering this service if reducing the revenues of their partners. However, if it is only perceived as a way of assisting them in their efforts to reduce costs, it can be helpful to the reputation and relationship with system integrators and system operation firms. However, this is something that is provided to them by ISVs and it might therefore be viewed as hostile and intrusive by these partners, and therefore hurt their reputation and relationships in this part of the business ecosystem (Ahuja, 2000 Williamson & Meyer, 2012).

5.1.11 Onsite education

The case company has developed strong human capital resources, involving staff possessing hardware, software and system skills (Case company employee 15, 2014; Grant, 1991). Also, their corporate culture indoctrinating the staff into valuing transparency and openness has resulted in staff with communicative skills and educational capabilities (Case company employee 16, 2014). What the case company lack is local reach (Case company employee 1, 2014). This is a critical factor, hindering the case company from offering onsite education in all regions they are currently servicing with products. They have the capabilities of offering onsite education to a limited amount of actors, but could not market it as a service reaching every customer demanding it (Case company employee 1, 2014; Case company employee 14, 2014). Thus, onsite education is not a service the case company could pursue, at least not uniformly across all markets (Grant, 1991).

Table 44 Resource based view analysis: Onsite education

	Physical capital resources	Human capital resources	Organizational resources	Capabilities
Onsite education	Fit	Fit	No fit	No fit

The rivalry among existing actors for onsite education is low (Porter, 2008). Onsite education is a service that is relatively expensive to perform and offer low direct returns for the educating actor (Case company employee 14, 2014). It is performed mainly for key accounts and key partners with the aim to sell more products, and if an actor is seeking to offer onsite education without simultaneously marketing their own products it is difficult to make this service add value to the educating actor. The bargaining power of suppliers is low, as most actors providing education choose to make their education company-specific and therefore possess the resources necessary to perform the education (System integrator 3, 2014; Case Company Homepage, 2014). The bargaining power of customers is medium. This depend entirely on which knowledge that is needed and the previous knowledge possessed by the

customer. Product-specific knowledge is most often needed for all end customers when installing new products, while system-specific knowledge is seldom needed for larger, or system-competent, end customers (System integrator 2, 2014; System integrator 3, 2014; System integrator 7, 2014; Case company employee 14, 2014). Threat of new entrants is regarded as low, as onsite education most often is specific for a company or for a company's products or components (Case company employee 13, 2014; Case Company Homepage, 2014). The barriers to enter into this market are high, as the knowledge that actor need to possess is highly company- or product-specific and the relations between suppliers and customers are close (System integrator 2, 2014; System integrator 3, 2014; System integrator 7, 2014; Case company employee 14, 2014). The threat of substitutes to onsite education is high. Remote education is made possible through informative websites, webinars and online courses, among others (Case Company Homepage, 2014).

Table 45 Porter's five forces analysis: Onsite education

	Rivalry among existing actors	Bargaining power of suppliers	Bargaining power of customers	Threat of new entrants	Threat of substitutes
Onsite education	Low	Low	Medium	Low	High

Onsite education is a service that is covered by all partners in the business ecosystem, aimed towards both end customer and ecosystem partners (Distributor 1, 2014; End Customer 8, 2014; System integrator 3, 2014; Case Company homepage, 2014). What is different for education services compared to other services is that it is used more as a tool for increasing the adoption of the ecosystem's partners' products or services, instead of directly generating revenues (Case company employee 13, 2014; Case Company homepage, 2014). Thus, an enhanced effort in educational services will not be viewed as intrusive and hostile by the case company's ecosystem partners, as it does not affect their revenue streams (Williamson & Meyer, 2012). Being more physically present in all parts of the ecosystem can as a result of the density and closeness (Ahuja, 2000) be viewed as reputation enhancing, but charging more than they already do can damage their reputation as a generous actors.

5.1.12 Remote education

The strong human capital resources developed by the case company could be utilized also for remote education (Grant, 1991; Prahalad & Hamel, 1990). This includes their competence in developing software and web-content not only related to their products (Case company employee 15, 2014; Case Company homepage, 2014). Their organizational resources such as the open and transparent culture have led to their position as a knowledge leader, a position which has required them to develop pedagogic skills that could be leveraged into developing remote educational material (Case company employee 16, 2014; Barney, 1991; Prahalad & Hamel, 1990). Also, as the case company has centralized their resources in one geographical location, it has allowed them to enable synergies and reach a large amount of customers with a remote education service (Case company employee 1, 2014; Case company employee 15, 2014).

Table 46 Resource based view analysis: Remote education

	Physical capital resources	Human capital resources	Organizational resources	Capabilities
Remote education	Fit	Fit	Fit	Fit

The rivalry among existing actors for remote education is medium (Porter, 2008). Similarly to onsite education this is partly due to low return on investments for companies not perceiving their educational offer as a necessity to enhance product sales (Case company employee 14, 2014). On the other hand, remote education do not require staff dedicated to perform education onsite, leading to less costs for local staff with educational expertise (Case company employee 7, 2014; Case company employee 14, 2014). Also, there are actors holding remote education sessions through webinars and video conferences on common system knowledge which are increasing the rivalry (Competitor Homepage 1, 2014; Competitor Homepage 2, 2014; Case Company Homepage; 2014). The bargaining power of suppliers is medium. For the product or component suppliers it is low, as they are the actors with highest competence regarding their products and components (System integrator 2, 2014; System integrator 3, 2014; System integrator 7, 2014; Case company employee 14, 2014). For the other actors providing remote education, it depends on how they acquire the competence necessary to hold the educational sessions (System integrator 3, 2014). Bargaining power of customers is low. They are most often required to purchase, or receive for free, remote education from the product supplier they have chosen (Case company employee 14, 2014). Regarding education on common system knowledge, the customers are not bound to their product supplier, even though it might be wise to choose the same supplier as the supplier of all educational material as the functioning of the system might depend on the products or components from that supplier (System integrator 3, 2014; Case Company Homepage, 2014). The threat of new entrants is low, both because there are high barriers to enter this market, and because currently there are relatively low profits in remote education (Case company employee 14, 2014). The barriers are that most customers are used to receive all educational material from their product or component supplier, and because the actors providing common system education have strong relations with their customers. The threat of substitute products or services is medium. Onsite education is preferred for specific products and components during the installation phase, but regarding more common knowledge there is a demand from both system integrators and end customers for remote education (System integrator 3, 2014).

Table 47 Porter's five forces analysis: Remote education

	Rivalry among existing actors	Bargaining power of suppliers	Bargaining power of customers	Threat of new entrants	Threat of substitutes
Remote education	Medium	Medium	Low	Low	Medium

Remote education is characterized by similar characteristics as onsite education. It is offered by all actors in the ecosystem with the aim to enhance awareness and adoption of their respective products or solutions (Distributor 1, 2014; End Customer 8, 2014; System integrator 3, 2014; Case Company homepage, 2014). It is also not directly revenue-generating, and enhanced efforts on remote education would therefore not be viewed as hostile acts from the case company (Williamson & Meyer, 2012). However, charging more than they already do for this service, might damage their reputation as a knowledge provider and generous partner (Ahuja, 2000; Williamson & Meyer, 2012).

5.1.13 Onsite new product information
The case company possesses strong human capital resources in relation to strong competence regarding the hardware, software and systems they sell (Case company employee 15, 2014; Grant, 1991). Also, they regard themselves as one of the most influential actors in the industry, and as the main actor currently conducting onsite new product information sessions for their customers and ecosystem partners (Case company employee 13, 2014; Case company employee 16, 2014). These activities are, however, concentrated to the geographical

areas where the case company has their largest markets. In order to be able to offer onsite new product information as a revenue-generating service they need to further develop these knowledge transferring capabilities to cover additional geographical areas (End Customer 8, 2014; Case company employee 14, 2014). This entails development of organizational capital resources, such as organizational structure and processes, and human capital resources, such as competent staff located in all regions (Case company employee 14, 2014; Grant, 1991). Currently, their regional offices do not hold the competence to perform these onsite product updates, satisfying demand of all markets. In terms of the theory of resources, capabilities and core competencies (Barney, 1991; Grant, 1991; Prahalad & Hamel, 1990), onsite new product information is a service fitting their human resources, but not their organizational resources and would therefore prove difficult to extend.

Table 48 Resource based view analysis: Onsite new product information

	Physical capital resources	Human capital resources	Organizational resources	Capabilities
Onsite new product information	Fit	No fit	No fit	No fit

The rivalry among existing actors for onsite new product information is low (Porter, 2008). This is due to that there are low returns on investment on such services, and that most product and component suppliers invite their customers to receive it free of charge (End Customer 8, 2014; System integrator 2, 2014). This makes the market for this service an unattractive market, which has resulted in low competition. The bargaining power of suppliers is high, as the resources necessary to perform onsite new product information sessions are supplier-specific (End Customer 6, 2014; Internal documents, 2014). The bargaining power of customers is high, due to that most information on new products is publicly available, and they are not required to meet their suppliers to receive such information (End Customer 5, 2014; System integrator 2, 2014). The threat of new entrants is low. It is easy to gain sufficient information and resources to perform onsite new product information sessions, but it is difficult to be first to market for an actor that has not developed the new product or enhancement themselves (End Customer 6, 2014; Internal documents, 2014). Also, the current market attractiveness confirms that the threat of new entrants is low (Internal documents, 2014). The threat of substitutes is high as new product information is available on websites, through newsletters and in white papers (End Customer 8, 2014).

Table 49 Porter's five forces analysis: Onsite new product information

	Rivalry among existing actors	Bargaining power of suppliers	Bargaining power of customers	Threat of new entrants	Threat of substitutes
Onsite new product information	Low	High	High	Low	High

In terms of the business ecosystem (Williamson & Meyer, 2012) this service is, like education, offered by all actors in the business ecosystem (Distributor 1, 2014; End Customer 8, 2014; System integrator 3, 2014; Case Company homepage, 2014). Thus, an enhanced effort in this service would not be viewed as hostile by the case company's partners. On the contrary, it might enhance the relationships (Williamson & Meyer, 2012) and reputation (Ahuja, 2000) with their ecosystem partners if their presence is stronger (End Customer 6, 2014; Customer Survey, 2013). However, starting to charge for this service might harm their reputation as a generous actor.

5.1.14 Remote new product information

The case company possess, and are currently further developing, human capital resources required for producing marketing material and web-content (Internal documents, 2014; Case Company Homepage, 2014; Grant, 1991). They have also developed organizational resources, such as defining processes and allocating resources, enabling remote new product information services. Being capable of keeping their customers updated has become increasingly important, and is a cornerstone in their position as a knowledge leader (Case company employee 16, 2014). In terms of the theory drawn on in relation to resources, capabilities and competencies (Barney, 1991; Grant, 1991; Prahalad & Hamel, 1990) remote new product information services is something that the company could extend their efforts in.

Table 50 Resource based view analysis: Remote new product information

	Physical capital resources	Human capital resources	Organizational resources	Capabilities
Remote new product information	Fit	Fit	Fit	Fit

The rivalry among existing actors for remote new product information is medium (Porter, 2008). Each actor provides their customers with information on new products through e.g. newsletters, white papers and through their website, resulting in low competition on a specific product or component level (End Customer 6, 2014; Internal documents, 2014). Regarding aggregated new product information, there are industry magazines and forums that collect information and present it, which increases the competition (System integrator 3, 2014; Case Company Homepage, 2014). The bargaining power of suppliers is deemed as low. It is possible for the product suppliers to withhold information, increasing their bargaining power, but as they most often want both their current and potential customers to be informed on their new products, the current availability and access to information is high (End Customer 6, 2014; Customer Survey, 2013). The bargaining power of customers is high. If they do not receive the new product information, there is a possibility for them to seek that information in other places, possibly leaving the product supplier without their business (End Customer 8, 2014). Threat of new entrants is medium, due to that the information most often is publicly available, but the attractiveness of the market makes it not possible to regard as high. The threat of substitutes is also medium. It is possible for customers to access information on new products from different sources, but the most reliable and most updated source is most often the product or component supplier.

Table 51 Porter's five forces analysis: Remote new product information

	Rivalry among existing actors	Bargaining power of suppliers	Bargaining power of customers	Threat of new entrants	Threat of substitutes
Remote new product information	Medium	Low	High	Medium	Medium

This service has the same characteristics as the onsite new product information service; offered for free by all actors in the business ecosystem with the aim to increase awareness and adoption of the respective actor's products or service (Distributor 1, 2014; End Customer 8, 2014; System integrator 3, 2014; Case Company homepage, 2014). Enhancing efforts for this service can be viewed as favorable for the reputation of the case company (Ahuja, 2000) as their presence and communication with their partners will be stronger. However, starting to charge for this service could be detrimental to the reputation and relationships, as it might leads to that their reputation as a generous actor is hurt.

5.1.15 Support

The physical capital resources (Grant, 1991) for this service are mainly tools, equipment and platforms needed for communicating with the actor sending in a request, most often over phone or over the internet (Case company employee 4, 2014). These resources reside in the case company through their existing support function. Technical competence in all product-related domains is essential in order to provide support, and these human capital resources (Grant, 1991) also reside in the case company's employees (Case company employee 15, 2014). Additionally, a support-function requires service-minded employees and a willingness to help, in terms of organizational resources (Case company employee 4, 2014; Grant, 1991). This is also strongly represented through the open culture and transparency that are two of the most important resources and capabilities that the company possesses (Case company employee 16, 2014). Thus, focusing on this service would leverage and utilize the resources, competencies and capabilities residing in the case company (Barney, 1991; Grant, 1991; Prahalad & Hamel, 1990).

Table 52 Resource based view analysis: Support

	Physical capital resources	Human capital resources	Organizational resources	Capabilities
Support	Fit	Fit	Fit	Fit

The rivalry among existing actors for support is medium (Porter, 2008). Several actors, with different position in the value chain, offer support to the same customers (System integrator 2, 2014; System integrator 3, 2014). However, as the support functions of several actors are not well developed, there are opportunities for an actor to differentiate themselves by offering outstanding customer support (Reseller 1, 2014). The returns are seldom related directly to the support, but to customer retention. The bargaining power of suppliers is high. The product suppliers are the actors possessing strongest support competence regarding product-specific issues, while system integrators possess strong support competence regarding system-specific issues (Case company employee 4, 2014; Case company employee 11, 2014; Case company employee 12, 2014). Also, more general training is provided by different suppliers, and actors willing to provide customer support have to acquire the required competence. The bargaining power of customers is medium. There is a dependency relationship where customers are dependent on the competence of their support providers for certain issues, but there is also a large amount of actors possessing such competence (Case company employee 9, 2014). The threat of new entrants is low. The barriers for new actors are high, both regarding competence they need to acquire, and due to the high rivalry where incumbent actors own relationships with most of the customers (Case company employee 4, 2014). The threat of substitutes is low. The possibilities for self-help are increasing, but are still difficult to acquire for a customer with limited product or system competence (System integrator 3, 2014; Case company employee 4, 2014).

Table 53 Porter's five forces analysis: Support

	Rivalry among existing actors	Bargaining power of suppliers	Bargaining power of customers	Threat of new entrants	Threat of substitutes
Support	Medium	High	Medium	Low	Low

Support is similar to education and new product information regarding how it is offered within the ecosystem (System integrator 2, 2014; System integrator 3, 2014). It is offered by the majority of the actors, for their respective products or solutions. Thus, enhanced efforts in

this area would not damage the case company's partner relations (Williamson & Meyer, 2012). On the contrary, the ability to assist their partners to a larger degree than what they do today would most likely strengthen the relationship. However, their reputation as a generous actor and knowledge provider might be damaged if they start to charge for the support service (Ahuja, 2000).

5.1.16 Return merchandise authorization

In relation to RMA, the physical capital resources required (Grant, 1991), are not possessed by the company in form of repair-specific equipment or facilities, in addition to warehousing facilities (Case company employee 11, 2014; Case company employee 12, 2014). As for human capital resources required (Grant, 1991), the case company possess technical capabilities related to hardware, software and systems technology, but lack repair-specific skills and staff (Case company employee 11, 2014; Case company employee 12, 2014). Other important organizational resources and capabilities that are required are a continental presence, which the company has achieved, together with logistics capabilities, which is not part of the case company's core competence (Case company employee 1, 2014; Case company employee 11, 2014; Case company employee 12, 2014). Therefore, in terms of the resources, capabilities and competencies (Barney, 1991; Grant, 1991; Prahalad & Hamel, 1990) possessed by the firm, it is not a good fit with this service and should not be focused more on.

<div align="center">Table 54 Resource based view analysis: Return merchandise authorization</div>

	Physical capital resources	Human capital resources	Organizational resources	Capabilities
RMA	No fit	Fit	No fit	No fit

In relation to the Porter framework (2008), the rivalry among existing actors for this service is deemed as low. This is because there are many actors providing expertise in different areas of this service, allowing an actor capable of conducting the entire RMA service process to differentiate itself (Case company employee 11, 2014; Case company employee 12, 2014). The supplier bargaining power for this service is also low, as there is a large amount of actors offering RMA, and there is low differentiation between their offerings. The bargaining power of customers is deemed as low. This is due to similar reasons as for the rivalry among existing actors; it is often incorporated in an overall agreement including warranty and service agreements with their suppliers. The threat of new entrants is also low, as reputation, relationship and contractual agreements act as entry barriers (Case company employee 11, 2014; Case company employee 12, 2014). For firms willing to offer the entire RMA process as a service, scale and continental presence are necessary, factors inhibiting actors to enter the market (Case company employee 11, 2014; Case company employee 12, 2014). As for substitutes, there are no substitutes to this service. Maintenance and support are services decreasing the need for RMA services, but could not be regarded as a substitute.

<div align="center">Table 55 Porter's five forces analysis: Return merchandise authorization</div>

	Rivalry among existing actors	Bargaining power of suppliers	Bargaining power of customers	Threat of new entrants	Threat of substitutes
RMA	Low	Low	Low	Low	Low

In terms of the business ecosystem (Williamson & Meyer, 2012), the partners in the ecosystem are most often consulted before initiating the RMA process (Case company

employee 11, 2014; Case company employee 12, 2014). If it is decided that the RMA process should be initiated, the ecosystem partners do not conduct the RMA themselves, therefore offering RMA services is not harmful for the relation. What could be harmful is that the same actor produces products and performs RMA services, as it could indicate opportunism in producing products that need to be repaired soon after the warranty expires. Therefore, if the case company chose to extent their efforts for this service, this would not only harm their relationship with the third party that actually carries out the reparations, it would also risk their credibility with producing products (Ahuja, 2000; Williamson & Meyer, 2012).

5.1.17 Analytics

In terms of physical capital resources (Grant, 1991) needed for this service, it is necessary to possess equipment in the form of software that supports the functionality of the analytics applications (System integrator 3, 2014; Case company employee 8, 2014). This is already developed by the case company (Case Company Homepage, 2014). As for human capital resources (Grant, 1991), it is important that the employees have in-depth knowledge about hardware, software and systems technology, in addition to analytic-specific skills, which is also possessed by the company (System integrator 3, 2014; Case company employee 8, 2014; Case company employee 15, 2014). No specific organizational capital resources or capabilities are required for this service. Based upon what is required for this service, and what the company possesses in terms of resources, capabilities and competencies (Barney, 1991; Grant, 1991; Prahalad & Hamel, 1990), it is advisable that the company put more effort into this service.

Table 56 Resource based view analysis: Analytics

	Physical capital resources	Human capital resources	Organizational resources	Capabilities
Analytics	Fit	Fit	Fit	Fit

In relation to the Porter framework (2008), the rivalry among existing actors for this service is deemed as medium. Analytics applications are currently used in the industry and there are a large amount of companies developing such applications, but the quality of these applications is not yet sufficient (Case company employee 13, 2014). Therefore, the bargaining power of the suppliers is currently low, since there is not yet a high demand for the service. The bargaining power of customers are deemed as high, as the final decision lies here, and they are yet managing their systems without it. For threats of new entrants, this is deemed as medium. Analytics is something that is likely to be offered as an additional offer, and therefore entry barriers exists as reputation, economics of scope and scale, and relationships. However, as the quality is yet to be improved, there are opportunities for firms able to develop such applications. The main substitute for this service is to continuously operate the system, which is a service that recently has been subject to an increased interest from end customers (End Customer 8, 2014). However, it is more expensive than analytics, and the threat of substitutes is therefore deemed as medium (End Customer 3, 2014; End Customer 5, 2014).

Table 57 Porter's five forces analysis: Analytics

	Rivalry among existing actors	Bargaining power of suppliers	Bargaining power of customers	Threat of new entrants	Threat of substitutes
Analytics	Medium	Low	High	Medium	Medium

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In terms of the business ecosystem (Williamson & Meyer, 2012), the analytics service is offered by the ISVs and the system integrators or their subcontractors (Case Company homepage, 2014). The way they use it differs. At times they charge for the service, and sometimes they use it as a way of reducing costs. In the sense that they generate service revenues, an effort to offer this service directly can be perceived as hostile by the system integrators, but if it is offered as way of enhancing their operations, it can enhance their relationships (Case Company homepage, 2014; Ahuja, 2000). This may however result in a damaged relationship with the ISVs, as they are generating revenues by offering such tools to the system integrators as well. The closeness of the business ecosystem might therefore lead to that the reputation of the case company will be damaged, at least in the part where the ISVs are present (Ahuja, 2000).

5.1.18 Business intelligence

As for the physical capital resource required for this service (Grant, 1991), this entails software that enables the analysis of the data, and preferable the aggregation of the data (End Customer 6, 2014; System integrator 4, 2014). The case company possesses software that enables the analysis of data, but has not pursued development of aggregation tools (Case company employee 15, 2014). For the human capital resources (Grant, 1991), it is important with technical knowledge in all the three previously mentioned domains, in addition to aggregation and business intelligence specific skills and experience (Case company employee 15, 2014; Case company employee 16, 2014). The case company possesses in-depth technical knowledge, and even though they do not possess the aggregation and business intelligence specific knowledge to the same extent, this is related to their competencies and to a certain degree transferable. As this service is highly software-enabled, there are no specific organizational resources or capabilities of significant importance necessary to offer it. Thus, the resources, capabilities and competencies (Barney, 1991; Grant, 1991; Prahalad & Hamel, 1990) residing in the case company is a good match for putting effort into this service.

Table 58 Resource based view analysis: Business intelligence

	Physical capital resources	Human capital resources	Organizational resources	Capabilities
Business intelligence	Fit	Fit	Fit	Fit

In relation to the Porter framework (2008), the rivalry among existing actors for this service is deemed as medium. This is because a lot of actors are present and able to provide it, but it is not widely sought after by the end customer, and existing solutions might not fulfill the requirements (End Customer 6, 2014; End Customer 8, 2014). For the bargaining power of supplier, it is set to medium. This is because the demand for this service exists, but the offering varies greatly in terms of quality and price, so the demand is not yet fully developed (End Customer 6, 2014; End Customer 8, 2014). The bargaining power of customers is also set to medium, because they are making the final decision and can manage without it, but is mediated by the dependence they have on their resellers or system integrators (End Customer 1, 2014; End Customer 2, 2014). The threat of new entrants is the same as for many of the other services, barriers in relation to relationships and reputation exists, and is thus deemed as low. As for the substitutes for business intelligence, this is deemed as low because the only other way to get the data is to do it manually (End Customer 5, 2014; End Customer 6, 2014).

Table 59 Porter's five forces analysis: Business intelligence

	Rivalry among existing actors	Bargaining power of suppliers	Bargaining power of customers	Threat of new entrants	Threat of substitutes
Business intelligence	Medium	Medium	Medium	Low	Low

In terms of the business ecosystem (Williamson & Meyer, 2012) this service is not widely offered by any of the actors. Some system integrators offer it as a function, as does ISVs, but they are rarely offering it in terms of complete aggregation of the data (Case Company homepage, 2014). Thus, offering this service does not directly intrude on any partners current revenue streams. But as this offer is directly related to the end customers it is closely related to the business and service conducted by their partners, mainly ISVs and system integrators. These actors are very concerned with owning the end customer relation (System integrator 3, 2014) and it would therefore be viewed as hostile as the case company would take over possible, future revenue streams (Williamson & Meyer, 2012). This would also diffuse throughout the ecosystem and possibly damage the reputation of the case company (Ahuja, 2000).

5.1.19 Warehousing

Warehousing has never been a priority for the case company (Case company employee 1, 2014). They therefore do not possess the key resources, neither physical, human nor organizational, necessary to deliver warehousing services (Internal documents, 2014; Grant, 1991; Prahalad & Hamel, 1991). They do have a few warehouses, but these are not for any other purpose than serving their distributors, and are not built for handling a large amount of customers (Case company employee 1, 2014). Also, the logistic solution is outsourced to a third-party-logistician (Internal documents, 2014).

Table 60 Resource based view analysis: Warehousing

	Physical capital resources	Human capital resources	Organizational resources	Capabilities
Warehousing	No fit	No fit	No fit	No fit

The rivalry among existing actors for warehousing is high (Porter, 2008). This is due to a large amount of actors, specializing in similar product areas (Distributor 1, 2014; Case company employee 1, 2014). The operating margin for warehousing is low, confirming both the high industry competition and the relatively low bargaining power of warehousing providers. The bargaining power of suppliers is regarded as medium. Large suppliers are in positions to choose between several global warehousing partners, while suppliers with smaller volumes have lower bargaining power (Case company employee 9, 2014). Bargaining power of customers is high. There are differences depending on the customers' geographical location, but most often there are several distributors in an area, allowing for the opportunity to switch distributor (Case Company Homepage, 2014). Threat of new entrants is low. Factors such as large initial investments in facilities and logistic solutions, training of warehousing personnel and building a functioning infrastructure create barriers for actors seeking to go into warehousing (Distributor 1, 2014). The threat of substitute services is low. In this industry, the product suppliers are positive to distributors warehousing their products in order to reach remote markets (Case company employee 1, 2014). The exception is for the software products, where the software companies either can choose to go through distributors or distribute their software digitally online (Case company employee 3, 2014).

Table 61 Porter's five forces analysis: Warehousing

	Rivalry among existing actors	Bargaining power of suppliers	Bargaining power of customers	Threat of new entrants	Threat of substitutes
Warehousing	High	Medium	High	Low	Low

This service is something that is mostly offered by the distribution network, both first and second tier of the distribution network (Case company employee 1, 2014; Williamson & Meyer, 2012). However, it is a service that in itself does not generate any revenues, but is merely a way of being able to respond swiftly to orders and inquiries from customers (Distributor 1, 2014). If the case company were to start offering warehousing as a service, it could be perceived as positive by the partners in the sense that the case company would be able to respond quicker to their inquiries in the regions where they would possess warehouses. However, for the first tier of the distribution network, such a move could be viewed as hostile in the sense that their function becomes obsolete, and thus harm the relationships with these partners (Ahuja, 2000; Williamson & Meyer, 2012).

5.1.20 Financial services

Financial services, other than product warranties, have not traditionally been performed by the case company (Case company employee 4, 2014; Case company employee 5, 2014). They do possess the physical resources, such as financial assets, required to provide the service, but not the human capital resources (Case company employee 15, 2014; Case company employee 16, 2014; Grant, 1991). The case company has prioritized their capability of reinvesting a large percentage of their revenues in their R&D, instead of using physical resources to develop financial services. Regarding human capital resources necessary, they do not possess staff with experience from developing or running financial services (Case company employee 1, 2014; Case company employee 15, 2014; Grant, 2014).

Table 62 Resource based view analysis: Financial services

	Physical capital resources	Human capital resources	Organizational resources	Capabilities
Financial services	Fit	No fit	Fit	No fit

Within the industry there are no current initiatives in providing financial services other than customer credit and warranties. Shared financial risks are present through both the customer credit and product warranties, but the rivalry among existing actors is deemed as low (Case company employee 4, 2014; Case company employee 5, 2014; Porter, 2008). The actors in the industry providing credit to customers perceive this as a necessity to sell products (Distributor 1, 2014). There are no direct suppliers, the actors providing these financial services do it with their own resources, reducing the bargaining power of suppliers to low (Distributor 1, 2014; Hammar, 2012; SEB Homepage, 2014). There are possibilities to include financial institutions to supply the actors with financial resources, but that option is not currently used. The bargaining power of customers is medium. Most customers require credit, but how much credit they are able to bargain for depends on how large volumes they purchase (Distributor 1, 2014). The threat of new entrants is medium. This is due to that there are opportunities to enter this market, but there is a main entry barrier that an actor aiming to provide financial services, has to possess strong financial resources (Hammar, 2012). The threat of substitutes is low. Financial services such as customer credit and product warranties are exhausting the current customer needs, and if customers require further financial support

there are several financial institutions outside the industry that are available to support them (Bederoff, 2013).

Table 63 Porter's five forces analysis: Financial services

	Rivalry among existing actors	Bargaining power of suppliers	Bargaining power of customers	Threat of new entrants	Threat of substitutes
Financial services	Low	Low	Medium	Medium	Low

This service is something that is offered by all actors in the business ecosystem, in the sense that they are purchasing on credit. What differs is the extent of credit that each actor offers (Distributor 1, 2014; Case company employee 1, 2014). This is not something that is revenue-generating for any of the actors, and therefore there is no danger of intruding on any of the revenues of the partners. On the other hand, the business ecosystem might perceive it as positive if the case company extended their financial services (Williamson & Meyer, 2012), because it would make the transactions smoother. Thus, the reputation might increase positively throughout the ecosystem (Ahuja, 2000).

5.1.21 Renting and leasing

For this service, warehousing and facilities are essential physical resources (Grant, 1991) in order to succeed in offering it (Case company employee 1, 2014). This is something that the case company lacks, as their focus is on product development, and only produces products on specific demands. As for human capital resources (Grant, 1991) it is necessary with supply chain skills and financial competence, which the case company also has chosen to outsource and therefore a bad match with what the case company possess (Case company employee 1, 2014). In terms of capabilities and organizational capabilities (Grant, 1991), excelling at logistics, having a local presence and an extensive financial department is vital for this service. This is also a bad fit with the most important resources, capabilities and competencies (Barney, 1991; Grant, 1991; Prahalad & Hamel, 1990) residing in the case company, and thus in view of the internal analysis, this service is deemed as a service that the case company should not put more efforts into.

Table 64 Resource based view analysis: Renting and leasing

	Physical capital resources	Human capital resources	Organizational resources	Capabilities
Renting and leasing	No fit	No fit	No fit	No fit

The rivalry among existing actors for renting and leasing is medium (Porter, 2008). This service is most often not a service that is marketed by the providing actors, but the majority of them offer their customers the opportunity to rent or lease products (End Customer 5, 2014). However, as it is an add-on service in order to sell their more of their products or main services, the margins on renting and leasing erode. This indicates that commitment for this service is low, hence medium rivalry. The bargaining power of suppliers is low, as there are a large amount of suppliers offering the products needed to provide this service. Additionally, there are no direct switching costs in purchasing the products from another supplier. The bargaining power of customers is high. This is due to the many suppliers of this service (End Customer 5, 2014; Reseller 1, 2014; System integrator 3, 2014). Also, as customers are used to receive this service as a free add-on, they expect it to be priced accordingly. The threat of new entrants is medium. There are opportunities for companies to specialize in renting and leasing out products (End Customer 8, 2014; Case company employee 9, 2014). However,

this is seldom enough for customers (System integrator 3, 2014). Most customers want a packaged solution including additional products and services if they are going to pursue this option. The threat of substitutes is high. The option to rent or lease products is to purchase them. In this industry, characterized by being conservative, this traditional option is most often chosen (System integrator 1, 2014; Reseller 1, 2014; Case company employee 9, 2014). However, to rent or lease products is an option adopted by an increasing amount of customers, but the majority still choses to purchase the products.

Table 65 Porter's five forces analysis: Renting and leasing

	Rivalry among existing actors	Bargaining power of suppliers	Bargaining power of customers	Threat of new entrants	Threat of substitutes
Renting and leasing	Medium	Low	High	Medium	High

This service is something that is currently offered mainly by actors in the second tier of the distribution network, but too a small extent (System integrator 3, 2014). Therefore, in terms of the business ecosystem (Williamson & Meyer, 2012), it would not directly intrude on any of their partners' revenues if the case company were to offer their products on a renting or leasing basis. However, it would most likely be perceived as a substitute to direct product sales, and therefore a threat to some of their partners' other revenue streams. This would hurt the relationship with the partners and the business ecosystem as a whole (Williamson & Meyer, 2012) and spread through it and damage the reputation of the case company (Ahuja, 2000).

5.2 Services to focus on and the implementation approach

In the above section, all services in the business ecosystem have been identified and evaluated based on an internal and external analysis, comprising the case company's resources, capabilities and competencies, the competitive environment and the effects of the dynamics of the business ecosystem. In the first part of this section, which services to exclude, keep and incorporate in the service portfolio are presented, including to what extent and why. The categories are presented in *Table 66 Results of service evaluation.*

Table 66 Results of service evaluation

Services to exclude	Services to keep	Services to incorporate
Installation Onsite operation Onsite system health monitoring Onsite maintenance Warehousing Financial services Renting and leasing	Configuration Onsite system design Onsite education Onsite new product information remote new product information RMA Support	Remote system design Remote operation Remote system health monitoring Remote maintenance Remote education Analytics Business intelligence

The second part will comprise what approach the case company should adopt when developing their service offerings, based on the current situation in the service market, both from the perspective of the case company and the business ecosystem.

5.2.1 The service portfolio

What becomes evident from the analysis is that there are some services that the case company should exclude completely from their service portfolio. These services are installation, onsite operation, onsite system health monitoring, onsite maintenance, warehousing, financial services and renting and leasing of their products. These services are characterized by a combination of a bad fit with the case company's resources, capabilities and competencies (Barney, 1991; Grant, 1991; Prahalad & Hamel, 1990), a crowded market with many actors offering the same or similar services (Porter, 2008) and lastly a high degree of risk related to how it will be perceived by the partners in the business ecosystem (Ahuja, 2000; Williamson & Meyer, 2012). Installation, onsite operations, onsite system health monitoring and onsite maintenance are all services that require a local presence together with basic technological knowledge (End Customer 2, 2014; System integrator 3, 2014). An organizational presence facilitating for local presence is something that the case company is reluctant to adopt due to the large investments required (Case company employee 15, 2014; Case company employee 16, 2014; Case company employee 17, 2014), while applying their superior technological know-how on basic activities would not fully utilize this capability. In terms of the external analysis of these services, they are all characterized by high competition, commoditized offerings and low margins, hence neither attractive nor profitable (Porter, 2008). Additionally, these services constitute a great part of the revenues for the actors currently offering it (System integrator 3, 2014; System integrator 4, 2014; System integrator 5, 2014; System integrator 6, 2014; Porter, 2008), and offering these services would therefore be perceived as a hostile act and damage the dynamics of the ecosystem (Williamson & Meyer, 2012). For warehousing, financial services and renting or leasing, extended financial capacity, logistics capacity and warehousing facilities are required. This is something that the company has outsourced to their ecosystem partners in order to stay more agile, enhance focus on their core activities and develop a functioning business ecosystem (Case company employee 1, 2014), and therefore a bad fit with their resources, competencies and capabilities (Case company employee 1, 2014; Case company employee 16, 2014; Barney, 1991; Grant, 1991; Prahalad & Hamel, 1990). In terms of the external environment and industry attractiveness of these services (Porter, 2008) all three provide some opportunities as they are not especially crowded or competitive, but the possibility to generate revenues from them is low. From the business ecosystem perspective (Ahuja, 2000; Williamson & Meyer, 2012), financial services could be perceived as positive by the partners, while warehousing and renting or leasing would be viewed as hostile as it is respectively a direct action towards the distributors' business (Distributor 1, 2014) and an intrusion on possible revenue streams for the system integrators (System integrator 3, 2014).

The analysis also reveals some services that the company should continue their efforts in, but not extend or start charging for. These services are configuration, onsite system design, onsite education, onsite new product information, remote new product information, RMA and support. First and foremost, they already exist in the case company's service portfolio as free of charge services, except onsite education, and are a part of the total offering that has given them their reputation as a generous supplier and valuable partner (Case company employee 1, 2014; Case company employee 4, 2014; Case company employee 15, 2014; Case company employee 16, 2014). In terms of resources, capabilities and competencies (Barney, 1991; Grant, 1991; Prahalad & Hamel, 1990), all these services require in-depth technological knowledge and thus utilize the superior technological know-how that the case company possesses (Case company employee 2, 2014; Case company employee 15, 2014). Onsite system design and onsite new product information require local presence to a larger degree if they were to be extended, and therefore the case company should continue to restrict these

services to their key accounts. The other services are possible to offer with the existing organizational structure and resources. In terms of the industry analysis and attractiveness (Porter, 2008) none of them are deemed as significantly unattractive, in the sense that they are not services that the actors compete over, but rather use as a way of complementing their core offer and enhance awareness and adoption of their respective products or services. In terms of the business ecosystem (Williamson & Meyer, 2012) and reputation (Ahuja, 2000), these services are part of the offering that has positioned them in the strong position as the lead firm in the business ecosystem. However, if they were to start charging for them directly it could damage their reputation as a generous actor and thus harm the business ecosystem.

This leaves a total of seven services that it is recommended that the case company incorporate in their service portfolio or extend their efforts in. These services are remote system design, remote operation, remote system health monitoring, remote maintenance, remote education, analytics and business intelligence. In terms of resources, capabilities and competencies (Barney, 1991; Grant, 1991; Prahalad & Hamel, 1990) all these resources require in-depth technical knowledge that utilize the technological know-how possessed by the case company Furthermore, they can all be performed or enabled remotely through software, which eliminates the requirement for local presence which is a large barrier for many other service offerings (Case company employee 15, 2014; Case company employee 16, 2014). In terms of the external analysis (Porter, 2008), all these services are crowded and the end customer relation want to be owned by the case company's partners (Reseller 1, 2014; System integrator 2, 2014; System integrator 3, 2014; System integrator 4, 2014; System integrator 5, 2014; System integrator 7, 2014), with the exception of remote education. However, many of these services are carried out with the aim to enhance the effectiveness of their operations and as a way of reducing costs (Case company employee 6, 2014). Therefore, the case company has the option to develop value-adding tools and solutions that exalts the performance of these services. This way the company could gain entrance to the service markets, without competing directly with their partners about the revenues and end customer relations, but instead provide the system integrators with the possibility to raise their margins and share the surplus. This might be perceived as hostile actions by the ISVs in the business ecosystem, but the relationship with these actors are neither as close nor as important as the relationships in the distribution network. Also, competition between ISVs and the case company already exists through overlapping offerings. Therefore, the ISVs are aware of the case company's presence, and further efforts would not be perceived as acts of intrusion. Offering these services in such a manner would therefore to a large degree uphold the relationships in the business ecosystem (Williamson & Meyer, 2012) and be beneficial for the reputation (Ahuja, 2000) as they are able to further assist their partners in the second tier of the distribution network with their business.

5.2.2 The service implementation approach
Increasing their efforts in the services decided upon in the section above, implies a movement downstream in the value chain (Stuckey & White, 1993) and in such a move there are certain dangers and conditions that needs to be considered and assessed in order to find the optimal approach to the implementation. Based on the danger of damaging the partner relationships that constitute a part of the case company's competitive advantage (Case company employee 15, 2014; Case company employee 16, 2014), their organizational structure (Case company employee 1, 2014) and their limited brand recognition among end customers speaks in favor of a passive and incremental approach to the implementation of the services. This way, the case company can prevent the business ecosystem from unraveling, but at the same time form a fundament for more extensive and comprehensive service offerings that can be leveraged into a more direct and profitable service organization in the future.

First of all, the second-tier partners in the distribution network want to own the relation with the end customers (Reseller 1, 2014; System integrator 2, 2014; System integrator 3, 2014; System integrator 4, 2014; System integrator 5, 2014; System integrator 7, 2014). They are reluctant to allow other actors to offer services to the end customers, even if it is regarding services they do not currently offer. The common opinion is that actors in the second tier would rather develop new capabilities in order to offer a service than letting a new entrant handle it. If the case company bypasses the second-tier partners and offer services to end customers, the system integrators and resellers would view that as a hostile action and act accordingly (Williamson & Meyer, 2012). As the case company's business ecosystem is a dense network, the information that the case company bypasses its partners could be detrimental for the case company's reputation (Ahuja, 2000). It could result in a large amount of partners becoming reluctant to buying the case company's products, resulting in a decrease in sales that would not be covered by the revenues generated from services.

The second condition suggesting an incremental process is that the organizational structure of the case company do not facilitate for a swift transition (Case company employee 13, 2014; Case company employee 16, 2014; Case company employee 17, 2014). The service activities are currently spread throughout different departments within the company, and are run as support functions to the product sales. Processes and infrastructure for information sharing are not developed, and the service activities are not being continuously monitored and evaluated in a uniform manner (Case company employee 11, 2014; Case company employee 12, 2014). This, together with a strong engineering-driven and product-centered culture prevents the services within these different departments to receive managerial attention sufficient to facilitate a swift transition (Case company employee 15, 2014; Case company employee 16, 2014; Oliva & Kallenberg, 2003). Also, the case company does not possess local branches with dedicated service staff (Case company employee 1, 2014; Case Company Homepage, 2014). In order to facilitate for a swift transition, local branches could have been utilized as stepping stones into offering the majority of the identified services (Oliva & Kallenberg, 2003).

The third condition is that the brand awareness for the case company and their products is low among the end customers (End Customer 5, 2014; End Customer 6, 2014; End Customer 8, 2014; System integrator 1, 2014; Case company employee 9, 2014). The second-tier partners, system integrators and resellers, have traditionally marketed their brands strongly towards the end customers, making their brands top-of-mind (Reseller 1, 2014; System integrator 2, 2014; System integrator 3, 2014; System integrator 4, 2014; System integrator 5, 2014; System integrator 7, 2014). The brands of hardware suppliers have not been exposed, other than when requested by the customer or in association with product support or repair. This indicates that end customers could be unwilling to switch service provider, from the second-tier partners they currently have a relation with, into a hardware supplier they do not have a developed relationship with (Grönroos, 1998).

5.3 Service offering design
In order to perform this transition, the *Product-Service Transition model* is used (Oliva & Kallenberg, 2003). It is used to guide the management of a company aiming to integrate services into their offering, and is outlined in four distinct stages.

Stage one is to consolidate product-related services (Oliva & Kallenberg, 2003). For the case company this implies moving the services directly related to products into one department in which they receive managerial attention, so they can be sufficiently monitored, and where services can be added in order to enhance the end customers' perception of overall service

quality. This regards the basic services necessary to sell products. For the case company it would include support, RMA, onsite and remote new product information and configuration. These are services they already perform and do not charge for, hence there is no competition with second-tier partners regarding revenues (Case company employee 7, 2014; Case company employee 11, 2014; Case company employee 12, 2014; Case company employee 14, 2014). Additionally, they currently provide onsite system design and onsite education to key accounts free of charge, services that also could be transferred into the service department. Consolidating these services would allow the management to evaluate them based on the monitored performance, and initiate actions aiming to improve the efficiency, quality and delivery time of the evaluated services (Oliva & Kallenberg, 2003). By evaluating and improving the basic services, the case company could build a strong service organization and reach a more beneficial position when deciding to start competing with ecosystem partners for service revenues.

Stage two is to enter the installed base service market (Oliva & Kallenberg, 2003). For the case company this means to initiate a revenue-generating service offering. It is argued that this should be preceded by a thorough opportunity identification process, as well as efforts to set up processes and structures necessary to ensure high quality in the service delivery (Case company employee 4, 2014; Case company employee 13, 2014; Oliva & Kallenberg, 2003). Both an internal and an external analysis were conducted in order to identify which services the case company would be proficient in delivering. The most promising services to enter for the case company are remote system design, remote education, business intelligence, remote operation, remote system health monitoring, remote maintenance and analytics. These services show potential both regarding end customer demand and fit with existing resources, capabilities, processes and structures. However, the second-tier partners do not accept that the case company delivers the services directly to end customers (Reseller 1, 2014; System integrator 2, 2014; System integrator 3, 2014; System integrator 4, 2014; System integrator 5, 2014; System integrator 7, 2014). The opportunity for the case company is instead to deliver value-adding tools to the second-tier partners, enabling them to be more efficient in their service offerings. There are different revenue models that could be used for these value-adding tools, and there are different options in how they could be packaged (Guiltinan, 1987; Miller, 2009; Silversmith, 2011). In order to create a minimal behavioral change and increase the possibility of customer adoption, the value-adding tools could initially be sold through licenses (Case company employee 17, 2014; Osterwalder & Pigneur, 2010). This is a known way to charge for software in the industry, and the customers would most likely be more receptive if using this revenue model. Packaging these services as fee-for-service is in line with the license revenue model (Dubey & Wagle, 2007). As the initial reaction from second-tier partners of the case company offering services would differ significantly among partners, it is important to not bundle all services together, hence the fee-for-service packaging model would be best suited (Distributor 1, 2014; System integrator 3, 2014; System integrator 4, 2014; System integrator 5, 2014; System integrator 7, 2014; Miller, 2009). The partners have shown differences in what value-adding tools they are demanding, and bundling them together could lead to a lower adoption rate than if offering them separately. Furthermore, the basic services presented in stage one should still be offered to customers (Case company employee 4, 2014; Case company employee 5, 2014; Case company employee 6, 2014; Case company employee 16, 2014). These could be offered either through the pay-for-performance, or through the comprehensive packaging model (Miller, 2009; Silversmith, 2011). To make the transition incremental, these services should remain as add-ons to the case company's products (Case company employee 17, 2014). To hinder relationship disruption, all of these services should be available, implying a comprehensive packaging model. It is argued that by building an adjacent service organization and to invest in infrastructure in order to offer a

local presence, companies aiming to transition into offering services will avoid the most prominent challenges (Oliva & Kallenberg, 2003). However, building an adjacent organization is strictly against the company beliefs, and would be immensely difficult to implement (Case company employee 17, 2014). Instead, the case company could allocate more resources to the service department, focusing on setting up structures and processes, with the aim to build an autonomous organization capable of selling, delivering and billing for services (Case company employee 15, 2014; Case company employee 16, 2014; Oliva & Kallenberg, 2003). Investments in infrastructure in order to offer a local presence goes against the business model of the case company (Internal documents, 2014). Even though it would be possible to challenge the business model, proceeding incrementally might be the most sensible option (Case company employee 17, 2014). This is both because the partner relationships would not be in danger, and because the seven services put forward as revenue-generating does not require local presence. By keeping the services in a separate department in a centralized location the case company will be able to fine-tune the processes and initiate the building of a reputation as a credible actor in the service sector of their industry (Oliva & Kallenberg, 2003).

Stage three is divided into two parts that could be performed either simultaneously or sequential (Oliva & Kallenberg, 2003). In order to keep the service offering development incremental, the two parts should be performed sequentially (Case company employee 17, 2014; Oliva & Kallenberg, 2003). Even though this stage is not in the nearest future for the case company there is still value in analyzing which main managerial challenges they would face in this stage, and how to cope with these challenges (Case company employee 13, 2014).

The first part of stage three is to expand into relationship-based services (Oliva & Kallenberg, 2003). In this phase, the focus from service transactions towards relationship-based service agreements should be initiated. The case company already benefit from strong relationships with their ecosystem partners regarding hardware sales, but in this phase the aim should be to tie up their second-tier partners in extensive service agreements, which they charge for (Case company employee 1, 2014; Case company employee 9, 2014; Oliva & Kallenberg, 2003). The revenue models that could be used are either the subscription model or the usage model (Rappa, 2004). The case company could use the subscription model, as the benefits of the subscription model for the case company would be predictable, recurring revenues and the opportunity to closely monitor the behavior of their customers without having to deal with vast amounts of usage data. These are benefits that are demanded from management within the case company (Case company employee 8, 2014; Case company employee 13, 2014; Case company employee 16, 2014). Another benefit with the subscription model over the usage model is that it is easier implemented and do not require metering of usage (Rappa, 2004). The packaging of the services could either be based on the comprehensive or the bundled packaging model (Miller, 2009). As the second-tier partners have shown large variety in service demand, it is argued that forcing all services on them through the comprehensive packaging model is not suitable (System integrator 3, 2014; System integrator 4, 2014; System integrator 5, 2014; System integrator 7, 2014; Miller, 2009). Packaging the services, allowing them to enjoy a bundle of services for a discounted price is argued to be the most suitable option. That fact that several of the services imply demand interdependencies strengthens this proposition (Guiltinan, 1987). There are still opportunities for second-tier partners to choose not to utilize this offering, but the result could be that they lose priority if conflicted by a partner purchasing the service agreement. For the case company it is of importance to utilize the infrastructure built in stage two, in order to achieve synergies in delivering the services (Oliva & Kallenberg, 2003).

The second part of stage three is to expand into process-centered services (Oliva & Kallenberg, 2003). When reaching this stage the case company should build on their relationships and use them as a stepping stone into becoming a solution provider. Using their developed service infrastructure and capabilities together with the existing relationships with second-tier partners could allow them to efficiently provide a comprehensive service solution for end customers. In order to not disqualify themselves from end customers possessing systems containing hardware and software from several different suppliers, the case company has to develop consulting capabilities and expand those into involving other suppliers' products. Two main challenges present themselves at this stage, the issue of replicating the knowledge-sharing capabilities of a professional service firm, and the issue of developing relationships also with end customers. The case company is in a beneficial position regarding both those issues (Case company employee 15, 2014; Case company employee 16, 2014). They already possess capabilities in sharing knowledge both internally and externally through their transparent culture and their IT competent staff, but should allocate more resources aiming to enable knowledge sharing in the service department. Furthermore, as an knowledge leader in the industry they already do work in projects with key accounts, relations they could leverage into receiving attention from a larger amount of end customers within the industries in which those projects are performed (Case company employee 10, 2014). Overcoming these challenges still implies a struggle, but the position the case company already possesses provides them with good opportunities to succeed.

There are other factors necessary to consider when transitioning from being a product-centered firm into a more service-oriented (Neu & Brown, 2005; Oliva & Kallenberg, 2003). The alignment of strategy, environment and organizational capabilities is the factor most significantly affecting this transition for the case company (Case company employee 13, 2014; Neu & Brown, 2005). Using this incremental transition process would allow the case company to continuously interact with partner businesses and end customers, in order to understand their needs and concerns. Due to the strategic importance of the case company's partner network, this transition has to be handled with care (Case company employee 8, 2014). It is crucial not allowing the partners to perceive the case company as an intruder on their business. Also, the case company's ability to perform a related diversification and leverage its internal resources and capabilities into offering the seven identified revenue-generating services is of great importance (Teece *et al*., 1997). The value proposition mix consisting of free basic services and value-adding tools for the seven revenue-generating services, combined with the hardware and software products offered by the case company, have been identified as what the second-tier partners demand. When approaching the installed base with this value proposition mix, the delivery is crucial in order to gain credibility, and to shift the ecosystem's perception of the case company as a producing firm into a solution provider (Case company employee 16, 2014; Case company employee 17, 2014; Grönroos, 1998). Furthermore, it is argued that technology can and should play an instrumental role in establishing a competitive advantage (Neu & Brown, 2005). If the case company pursues this transition process, focusing on value-adding tools for the seven revenue-generating services that all stems from technology capabilities, they are in a strong position to stay competitive in the future.

6 Conclusions and recommendations

In this section the conclusions from this study are presented, the research questions are answered and the overall research purpose is elaborated upon. Also, recommendations for how the case company should proceed will be presented based on the drawn conclusions.

Focus of this study has been to identify which services that are present in the industry and evaluate which services that would be most attractive for the case company to pursue.

The research purpose was stated as follows:

> *Investigate how the case company can capture downstream value by generating revenues from the service market.*

Followed by the research questions:

> a) *In what ways can the case company support end customers and partners in the business ecosystem beyond what is done today?*
> b) *Is the case company capable of successfully offer services?*
> c) *How will the introduction of services by the case company be perceived by the partners in the business ecosystem?*

In order to fulfill the research purpose, the three research questions had to be answered. First, it was revealed that the case company can assist end customers and partners by improving the already existing services in the industry. Second, the case company is capable of successfully offer those services that utilize their high technological competence, do not require a local presence and do not require large investments in equipment or tools. Third, it was revealed that an introduction of services by the case company would be perceived as intrusive by the partners in the ecosystem. This is because the second-tier partners want to own the end customer relation.

It was found that the case company should focus on improving the service offerings of the partners in the ecosystem in order to capture more downstream value from the service market. This is because they are not in a position to compromise the second-tier partner relations, due to that their brand is not strong enough among end customers and they lack the organizational structure and service department to deliver services directly to end customers. Seven of these service offerings fit the criteria of being attractive from the perspective of industry competitiveness, together with matching the internal resources and capabilities of the case company, while not disrupting the relationships with the partners in the ecosystem. Those services are remote system design, remote education, remote operation, remote system health monitoring, remote maintenance, business intelligence and analytics.

In order to improve the service offerings of the second-tier partners for these seven services, the approach should be to offer value-adding tools developed based on the requirements of the second-tier partners. By applying such a passive approach towards the service market, the case company will be able to take incremental steps towards capturing more of the downstream value. By building up a functioning service department based on these steps, the case company will develop a sound fundament that that they can leverage in a later stage to become a strong actor in the service market. Building a strong position allows them to rapidly obtain a larger part of the revenues from the service market, than if they would have started from their current position.

It was also found that the case company should keep performing seven of the service activities that currently is part of their offering, either directly or indirectly. These seven service activities are onsite system design, configuration, onsite education, onsite new product information, remote new product information, support and RMA. These are all valued by the partners in the ecosystem and by the end customers, but do not fit the criteria of being attractive from the perspective of industry competitiveness, together with matching the

internal resources and capabilities of the case company, while not disrupting the relationships with the partners in the ecosystem. Therefore those are services that the case company should keep performing, but not generate revenues from.

6.1 Recommendations

The first part of this section entails short term recommendations that the company should start implementing immediately, followed by medium term recommendations that can be implemented once a base is formed by the actions carried out in the short term recommendations. Then, long term considerations will be discussed, entailing how the industry may evolve in the future and that the current business model does not facilitate for a more service-oriented culture. Lastly, considerations the case company continuously should discuss and evaluate are presented. A short overview of the different recommendations is presented in *Table 67 Recommendations and considerations.*

Table 67 Recommendations and considerations

Recommendations and considerations	
Short term recommendations	1) Consolidate basic services 2) Foster and nurture a service-oriented culture 3) Initiate development of value-adding tools
Medium term recommendations	4) Develop and improve service department 5) Commercialize value-adding tools
Long term considerations	6) Initiate tight relationship-based service agreement with second-tier partners 7) Utilize incumbent service infrastructure to partner up with second-tier partners to become a solution provider
Continuous considerations	8) Increase the case company's brand awareness among end customers 9) Challenge business model

6.1.1 Short term recommendations

There are mainly three specific actions that the case company needs to take before they are in a position where they are able to generate revenues from the service market.

1. Consolidate basic services

The first step towards a position where the case company is able to capture downstream value is to bring all services that are currently performed by the case company into one department dedicated to services, as they are currently performed in various departments of the case company. These services include configuration, onsite system design, onsite education, onsite and remote new product information, RMA and support. Bringing these services into one department will improve the knowledge- and information-sharing for the activities. One important aspect of it is to include the function of sales engineers. This will be an effective way to bring credibility and attention into a previously un-prioritized area within the case

company, as sales engineering is viewed as a valuable function, enabling a significant part of the case company's service offerings.

2. *Foster and nurture a service-oriented culture*

As mentioned, services is a domain that intentionally has not received the case company's managerial attention, as their focus has been on delivering superior products and leaving the services to the partners in the ecosystem. However, this has led to that services are viewed solely as add-ons to sell more products and not a part of their core business. This perception has to be shifted if services are to succeed as a part of the case company's revenues. In addition to consolidating them under one department, such a shift needs to be supported by the top management.

3. *Initiate development of value-adding tools*

It has been argued that the case company is not in a position where they can capture value directly from services, or offer services directly to end customers. Therefore they should provide the partners in the ecosystem with value-adding tools that can increase their margins, which again can be shared between the case company and the partners. Value-adding tools for remote operation, business intelligence and analytics are already commercialized by the case company. For remote maintenance and remote system health monitoring, these tools are currently under development. Some basic tools are also provided by the case company for remote system design and remote education. What is especially important is that the tools for business intelligence are extended to include automatic aggregation of the data, and the tools for remote education and remote system design are upgraded into user-friendly tutorials and tools that produce system- and product-propositions based on the system requirements. The tools for remote operation, analytics, remote maintenance and remote system health monitoring needs to be refined and tailored to fit the needs of the second-tier partners.

6.1.2 Medium term recommendations

After initiating the three recommended short term actions the company will have formed a base from which they can take more specific actions that could result in revenues generated from the service market.

1. *Develop and improve service department*

After consolidating the basic service by bringing them into one department, some initial benefits will arise through more efficient communication and information and knowledge-sharing. When this department has stabilized, the focus should be on process-oriented innovation. By identifying and exploiting potential synergies within the operations and activities, the case company could reach a position where they possess a service organization that is efficient in the delivery of services, and are well prepared to generate revenues directly from services in the future. Issues within recently formed service departments are the management of service staff and knowledge-sharing capabilities, which could be necessary to develop and improve through identification of synergies.

2. *Commercialize value-adding tools*

In order to start generating revenues from the service market the value-adding tools should be offered towards the actors in the second tier of the distribution network. The rationale behind such tools is that the case company does not operate them themselves, but licenses them to the system integrators so they can use them in their service offerings. The tools can be used either

as a way of charging end customers or as a way of reducing costs in the second-tier partners' operations. Regardless, this should result in increased margins, incentivizing the procurement by system integrators and resellers. This license-based offer should initially be offered unbundled, i.e. that the second-tier partners themselves choose which tools they want to procure and use. The extent of the license should count for a restricted number of systems on which the license can be used, incentivizing procurement for both small and big actors, and facilitating for revenues that are aligned with the extent of usage.

6.1.3 Long term considerations

In addition to the short and medium term recommendations that are advised that the company starts implementing as soon as possible, there are some long term considerations that might be implemented by the case company, depending on how the industry evolves in the future.

1. *Initiate tight relationship-based service agreement with second-tier partners*

When the case company has commercialized their value-adding tools and these solutions have stabilized and become accepted in the marketplace, one possible way to capture more of the downstream value is to extend these offerings further. This would imply that the amount of software that the case company develops is extended to include all aspects of the software related to their products. This way, the case company can promote a case company-branded service package towards the second-tier partners, so that when a case company product is used they are required to use the case company's complementary products such as hosting platforms and other software. This would however imply that they are excluding the ISVs from the business ecosystem, which would be a highly radical move as it renders a part of the business ecosystem obsolete. This might disrupt the remainder of the ecosystem, as the freedom of the second-tier partners to choose freely between software from ISVs becomes limited. However, the ISVs are not an integral part of the ecosystem, and development of superior software by other actors has the potential to completely preclude the ISVs from the ecosystem.

2. *Utilize incumbent service infrastructure to partner up with second-tier partners to become a solution provider*

Another possible step towards increased revenues from services is to make an even more radical change in the structure of the business ecosystem. This entails that the case company takes over the end customer relation from the second tier of the distribution network, which contradicts their current business model. In this scenario, the case company would be viewed as a solution provider, where they are hiring third parties that handle the physical services carried out onsite, such as installation, operation and maintenance.

6.1.4 Continuous considerations

Even though certain actions have been proposed for how the case company can generate revenues from the service market, the study revealed that the case company neither is in a position to fully exploit the revenue potential residing in the service market, nor do they have the organizational structure or capabilities necessary to transform into a more service-oriented firm. Changes in the industry, such as the commoditization of products and increased competition might force them to adapt in order to maintain their position as the market leader. Therefore, two distinct areas need to be subject to continuous improvement and consideration of the case company, in order for them to adapt successfully to changes that might occur in the industry environment.

1. Increase the case company's brand awareness among end customers

What becomes evident from this study is that the end customer, with some exceptions, does not have a strong relation to the brand of producing firms, neither the case company nor their competitors. The end customers' brand awareness concerns the second-tier partners. In terms of the products the case company offers, the end customers most often perceive their products as low value for money. The high quality and ease of use related to the case company's products is not acknowledged by the end customers. Instead, they perceive the case company's products as expensive. Therefore, if the case company is to generate revenues from services more directly, they need to increase brand awareness so that their products, services or solutions are acknowledged for their high quality and ease of use, and are demanded by the end customer through a market pull instead of relying on their second-tier partners to make the decision.

2. Challenge the business model

The current business model is a big part of the success that the case company has experienced the last two decades. However, the products are becoming more commoditized, the margins are decreasing and competition is slowly becoming more based on price than earlier. Actions have been proposed for how the case company can capture downstream value through value-adding tools, but it could be necessary to integrate vertically and expand their offerings in the future in order to remain profitable. This cannot be done with the current business model, as a direct service offering intrude on one or several of their partners business and revenue streams. Therefore, it is important that the case company considers the strategic direction and how well it fits with the existing business model. As long as the industry does not radically change, a product-centered strategy with a business ecosystem to perform and deliver infrastructure services and products, the business model remains beneficial. However, in a scenario where the industry changes and the case company integrates vertically, either by choice or by necessity, the current business model would prevent them from developing the necessary capabilities and organizational structure; in addition to that they would compete with actors that are buying their products.

7 Discussion
In this section, the limitations with this study is discussed and further research needed to follow up on the recommendations is presented. The issues brought up stems both from the interviews conducted, as well as from theoretical implications.

Even though the recommendations are believed to be both reasonable and possible based on extensive empirical data, they do not include any specific recommendations for how they should be carried out. It is therefore proposed that the case company allocate resources to future research investigating the following areas:

Short term

1. *How to develop value-adding tools*
2. *How to transition from a product-centered culture to a more service-oriented culture*

The these two issues need to be investigated immediately. The case company have already initiated projects on how to develop tools for analytics, remote operation, remote system health monitoring and remote maintenance, but more resources have to be allocated to the

developmet of both the software and the offering for the value-adding tools related to remote education and remote system design.

Regarding the transition from a product-centered culture to an increased open-mindedness for services, it is believed that there still is a strong resistance within the company. Therefore it is evident that the perception of services needs to be shifted. However, specific actions that drives this shift forward needs to be investigated in a more detailed manner.

Medium term

1. *How to successfully commercialize value-adding tools*
2. *How to utilize synergies in service operations*

These issues are less urgent than the two presented above, as they cannot be implemented before the development of the value-addig tools is completed and a more service-oriented culture is implemented. Regarding the commercialization of the value-adding tools, it was recommended that they are offered as independent licences. There are however some factors that should be investigated further, especially the possibility to deliver the value-adding tools in a bundled manner at a later stage. This might lead to an increased awareness and adoption of functionalities that system integrators would not initially consider as part of their system. Furthermore, the value-adding tools are seen as a way for the case company to gain a foothold in the service market, which can be utilized to offer more direct services in the future. This implies that the value-adding tools are branded and offered in a way that adds value to the case company's brand for their recognition towards the end customers. Therefore, resources needs to be allocated to investigate how this can be achieved.

It has also been recommended that the case company identifies and utilize synergies that arises from consolidating basic services into one service department, which is an important part of how to implement and run a service organization. However, more investigation needs to be made in order for the case company to identify how activities for the respective services overlap, and compress these activities to effectivize the operations.

The geographical scope of this study has been limited to the Swedish, and to a small extent, the Norwegian market. This has provided benefits related to accessible interviewees, elimination of language barriers and more consistent data of higher quality. However, 50% of the case company's product sales comes from the US market. One interview was conducted with a case company employee stationed in the US (Case company employee 14, 2014), which to a large degree confirmed that the findings are consistent with the characteristics of the US market. However, more investigation is needed to either ensure the generalizabiliy of the findings from the Swedish market to the US market, or identify shortcomings and differences between these markets that might have implications for the development of a service-offering in the US market. It should also be stated that a similar investigation needs to be made for the remaining markets in which the case company operates in, even though they are not as important as the US market.

Regarding the theoretical framework, one specific limitation needs to be discussed. The process for going from a purely product-centered organization to a more service-oriented organization has been outlined based on the research conducted by Oliva and Kallenberg (2003). Even though their research is comprehensive and involves a large amount of input from previous research in the field of servitization, it could have been beneficial to complement this research with additional academic sources. However, criticism has been directed towards the field of servitization of organizations, in the sense a small amount of

research has been conducted that is aimed towards helping practitioners (Baines, Lightfoot, Benedetti & Kay, 2009). The focus in servitization research has mainly been on defining concepts and outlining rationales for transitioning into services, not how to manage the transition.

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   a. Manager, Distribution Partners
   b. 13.02.2014
2. Case company employee 2
   a. Manager, Business Coordination Office
   b. 18.02.2014
3. Case company employee 3
   a. Product Manager, New Business
   b. 19.02.2014
4. Case company employee 4
   a. Director, Systems & Services
   b. 20.02.2014
5. Case company employee 5
   a. Service Manager, Global Technical Services
   b. 20.02.2014
6. Case company employee 6
   a. Product Manager, New Solutions
   b. 20.02.2014
   c. 24.02.2014
7. Case company employee 7
   a. Project Manager, Global Technical Services
   b. 24.02.2014
8. Case company employee 8
   a. Director, New Business
   b. 25.02.2014
9. Case company employee 9
   a. Head of Global End Customers, Global Partners & Business Development
   b. 27.02.2014
10. Case company employee 10
    a. Director Business Development Retail, Global Partners & Business Development
    b. 27.02.2014
11. Case company employee 11
    a. Quality Engineer, Quality & Environment
    b. 17.03.2014
12. Case company employee 12
    a. HVM Program Manager, Product Preparation & Sourcing
    b. 17.03.2014
13. Case company employee 13
    a. Business Developer, New Business
    b. 18.03.2014

14. Case company employee 14
    a. National Accounts Program Manager, Business Development North and Central America
    b. 27.03.2014
15. Case company employee 15
    a. Senior Expert, Product Concept & New Ideas
    b. 23.04.2013
16. Case company employee 16
    a. CEO
    b. 29.04.2014
17. Case company employee 17
    a. Director, Corporate Sales Projects
    b. 08.05.2014

External Distributors

1. Distributor 1
    a. CEO, Distribution Company
    b. 24.04.2014

System integrators

2. System integrator 1
    a. Installer, System Integrator Company 1, Sweden
    b. 19.02.2014
3. System integrator 2
    a. Project Manager, System Integrator Company 2, Sweden
    b. 17.03.2014
4. System integrator 3
    a. Project Manager, System Integrator Company 3, Sweden
    b. 27.03.2014
5. System integrator 4
    a. Project Manager, System Integrator Company 4, Sweden
6. System integrator 5
    a. Business Developer and Market Responsible, System Integrator Company 5, Sweden
    b. 23.04.2014
7. System integrator 6
    a. System Specialist, System Integrator Company 6, Sweden
    b. 28.04.2014
8. System integrator 7
    a. Manager, System Integrator Company 7, Sweden
    b. 05.05.2014

Resellers

9. Reseller 1
   a. CEO, Reseller, Sweden
   b. 07.03.2014

End customers

10. End Customer 1
    a. Head of Operations, University, Sweden
    b. 28.02.2014
11. End Customer 2
    a. Head of Operations, Shopping Mall, Norway
    b. 06.03.2014
12. End Customer 3
    a. Head of Operations, Airport, Norway
    b. 17.03.2014
13. End Customer 4
    a. Head of Operations, Railway Company, Sweden
    b. 17.03.2014
14. End Customer 5
    a. Head of Operations, Event Company, Sweden
    b. 17.03.2014
15. End Customer 6
    a. Head of Operations, Retail Chain 1, Sweden
    b. 18.03.2014
16. End Customer 7
    a. Property Manager, Shopping Malls, Norway
    b. 24.03.2014
17. End Customer 8
    a. Head of Operations , Retail Chain 2, Sweden
    b. 31.03.2014

Appendix

Interview guides

Interview guide phase 2 - End customers

Semi-structured interview guide – End customers

Date   **:**
Time   **:**
Name   **:**
Company   **:**
Occupation   **:**
Type of interview   **:**

1. What is your role in your company?
    a.   What are your responsibilities?
    b. In what industry does your company operate?
2. What are your purposes for having a surveillance system?
3. What is the size of your surveillance system?
4. What does your surveillance system consist of?
5. How is the process for acquiring/deciding upon a surveillance system?
    a. Who do you contact?
    b. Who supports you in the decision process?
    c. Who makes the final decisions (internal)?
    d. Who delivered the surveillance system and what did they do?
6. Who is responsible for operating the system?
    a. Who has access to the content?
    b. Who is responsible for keeping the systems up to date?
7. What kinds of services are related to the ssystem today?
    a. Are you charged for "unexpected events" such as identifying why a problem occurred, and what measures needs to be taken in order to fix it?
8. What is included in the service agreement?
9. What aspects of the system are you currently not satisfied with?
10. What kinds of services are not present today, but you think you could benefit from having available?
11. How do you work with keeping your product knowledge up to date?

Semi-structured interview guide - Channel partners

Date   **:**
Time   **:**
Name   **:**
Company   **:**
Occupation   **:**
Type of interview   **:**

12. What is your role in your company?
    a. What are your responsibilities in your company?
13. What is the business of your company?
    a. Reseller/system integrator/distributor?
    b. Solely systems, or many different installations/products?
14. What kind of customers do you serve?
    a. In terms of price?
    b. In terms of size of system?
15. What kind of suppliers do you use?
    a. Why do you use these suppliers?
    b. Do you miss anything from their offerings?
    c. In what ways could the offerings of your supplier be improved?
16. What do you offer to the end customer?
    a. Products
    b. Services
    c. Other
17. Do you offer something to the end customer that you do not generate revenues from, but is offered because of necessity/customer demands?
    a. What are the reasons you don't want to offer these services?
    b. Do you have any suggestions how should take over these services?
18. Are there any possible services that you are considering to offer?
    a. How did you identify these services?
    b. Why don't you offer these services today?
19. What are the main problems with current systems, both new and old?
    a. Who is responsible for the problems?
    b. How and by whom can these be solved?
20. How important is branding in the industry?
    a. Does it add any value towards the end customer?
    b. Which brands are important (supplier or system integrator)?
    c. Would you value having a stronger brand?
        i. How can you achieve this (branding of supplier)?
21. How knowledgeable do you feel that the end customer is about technology/products?
22. What are the success factors for succeeding in your industry?

Semi-structured interview guide - Internal

Date   **:**
Time   **:**
Name   **:**
Department   **:**
Occupation   **:**
Type of interview   **:**

1. What is your role? What are your responsibilities?
2. What does your business unit do?
   a. Internal/external
   b. Contact points?
   c. Means of communication
   d. Means of information gathering
   e. Closeness of relationship
3. What are the existing services in the value chain?
   a. Distributors, SI, resellers, ISV, TP, consultants
   b. Do you see any services not performing?
4. What do you think the case company's current service offerings are?
5. What service do you see as needed in the value chain?
   a. Both from a second tier perspective and an end-customer perspective
6. What do you think the biggest problems are with products or systems?
   a. Both from a second tier perspective and end-customer perspective
7. Do you see any potential in branding the case company towards end customers?
   a. Directly for the case company
   b. Value for partners
   c. Branding services

Semi-structured interview guide - End customers

Date :
Time :
Name :
Company :
Occupation :
Type of interview :

1. System design
   a. When you are acquiring a new system, or upgrading it, do you hire in an external party to assist in the system design, or do you do it yourself?
      i. Who do you use?
   b. How is this process working?
   c. Do you pay for it?
      i. How?
   d. Do you miss anything in relation to system design?
2. Installation
   a. When you have decided upon a new system and its requirements, how do you install it?
      i. Who do you use?
   b. How is this process working?
   c. How do you pay for it?
   d. Do you miss anything in relation to system installation?
3. Configuration
   a. If you need to configure products or systems before or during deployment, what do you do?
      i. Who do you use?
   b. How is this process working?
   c. Do you pay for it?
      i. How?
   d. Do you miss anything in relation to configuration services?
4. Maintenance
   a. When you have installed a new system, how do you maintain it?
      i. Who do you use?
   b. How is this process working?
      i. What is included in the service agreement?
      ii. What happens for unexpected occurences?
   c. Do you pay for it?
      i. How?
   d. Do you miss anything in relation to system maintenance?
5. RMA

a. When a product/component breaks down beyond a quick maintenance fix, what do you do?
   i. Who do you use?
   ii. Online, phone etc?
b. How is this process working?
   i. Within the warranty
   ii. Outside warranty
c. Do you pay for it?
   i. How?
d. Do you miss anything in relation to RMA?

6. Education
   a. How do you obtain knowledge about products and systems from both a technological and commercial perspective?
      i. Who do you use?
   b. How is this process working?
   c. Do you pay for it?
      i. How?
   d. Do you miss anything in relation to education?

7. New product information
   a. How do you obtain knowledge about the latest new products in the industry?
      i. Who do you use?
   b. How is this process working?
   c. Do you pay for it?
      i. How?
   d. Do you miss anything in relation to new product information?

8. Support
   a. How do you utilize the support that is available?
      i. Who do you use?
      ii. Why?
   b. How is this process working?
   c. Do you pay for it?
      i. How?
   d. Do you miss anything in relation to support?

9. Operation
   a. Who is responsible for operating the system?
      i. Who do you use?
      ii. Why?
   b. How is this process working?
   c. Do you pay for it?
      i. How?
   d. Do you miss anything in relation to the operation offering?

10. System health monitoring?
    a. How do you ensure that your systems are constantly functionable and up to date?

        i.   Who do you use?
- b. How is this process working?
- c. Do you pay for it?
    - i.   How?
- d. Do you miss anything in relation to remote health monitoring?

11. Business Intelligence
- a. Do you use your systems to anything other than traditional operation?
    - i.   What do you use?
- b. How is this process working?
- c. Do you pay for it?
    - i.   How?
- d. Do you miss anything in relation to business intelligence?

12. Leasing/renting
- a. Do you have the possibility to lease/rent products or systems?
    - i.   Who do you use?
- b. How is this process working?
- c. Do you pay for it?
    - i.   How?
- d. Do you miss anything in relation to leasing/renting?

13. Warehousing
- a. Do you use warehousing services?
    - i.   Who do you use?
- b. How is this process working?
- c. Do you pay for it?
    - i.   How?
- d. Do you miss anything in relation to warehousing?

14. Financial services
- a. Do you have the possibility to utilize financial services such as credits and loans?
    - i.   Who do you use?
- b. How is this process working?
- c. Do you pay for it?
    - i.   How?
- d. Do you miss anything in relation to financial services?

Semi-structured interview guide - Channel partners

Date :
Time :
Name :
Company :
Occupation :
Type of interview :

1. Remote system design
   a. Do you offer any system design services?
      i. In what ways do you offer them; remotely or onsite?
      ii. To whom do you offer such services?
      iii. What is included in your offerings?
      iv. What is the best way of offering system design services?
      v. What are the success factors/unique selling point for system design services?
   b. Do you receive any system design services?
      i. In what ways do you receive them?
      ii. By whom do you receive them from?
      iii. What is included in the offerings you receive?
      iv. What are the best ways of receiving system design services?
      v. What are the success factors/unique selling point for receiving system design services?
2. Remote operation
   a. Do you offer any services related to remote operation of systems?
      i. To whom do you offer such services?
      ii. What is included in your offerings?
      iii. What is the best way of offering system design services?
      iv. What are the success factors/unique selling point for remote operation services?
   b. Do you receive any services related to remote operation of systems?
      i. In what ways do you receive them?
      ii. By whom do you receive them from?
      iii. What is included in the offerings you receive?
      iv. What are the best ways of receiving system design services?
      v. What are the success factors/unique selling point for receiving system design services?
3. Remote system health monitoring
   a. Do you offer any services related to remote system health monitoring of the systems?

        i. To whom do you offer such services?

       ii. What is included in the offerings you receive?

     iii. What are the best ways of offering remote system health monitoring?

     iv. What are the success factors/unique selling point for offering remote system health monitoring services?

b. Do you receive any services related to remote system health monitoring of systems?

        i. In what ways do you receive them?

       ii. By whom do you receive them from?

     iii. What is included in the offerings you receive?

     iv. What are the best ways of receiving such services?

      v. What are the success factors/unique selling point for receiving such services?

4. Remote maintenance

a. Do you offer any services related to remote reactive maintenance of the systems?

        i. To whom do you offer such services?

       ii. What is included in the offerings you receive?

     iii. What are the best ways of offering remote reactive maintenance?

     iv. What are the success factors/unique selling point for offering remote reactive maintenance services?

b. Do you receive any services related to remote maintenance of systems?

        i. In what ways do you receive them?

       ii. By whom do you receive them from?

     iii. What is included in the offerings you receive?

     iv. What are the best ways of receiving such services?

      v. What are the success factors/unique selling point for receiving such services?

5. Analytics

a. Do you offer any services related to analytics of the systems?

        i. To whom do you offer such services?

       ii. What is included in your offerings?

     iii. What are the best ways of offering analytics services?

     iv. What are the success factors/unique selling point for offering analytics services?

b. Do you receive any services related to analytics of systems?

        i. In what ways do you receive them?

       ii. By whom do you receive them from?

     iii. What is included in the offerings you receive?

     iv. What are the best ways of receiving such services?

      v. What are the success factors/unique selling point for receiving such services?

6. Business intelligence

a. Do you offer any services related to business intelligence of the systems?

        i. To whom do you offer such services?

       ii. What is included in your offerings?

     iii. What are the best ways of offering business intelligence services?

     iv. What are the success factors/unique selling point for offering business intelligence services?

b. Do you receive any services related to business intelligence of systems?

        i. In what ways do you receive them?

       ii. By whom do you receive them from?

     iii. What is included in the offerings you receive?

     iv. What are the best ways of receiving such services?

      v. What are the success factors/unique selling point for receiving such services?

7. Remote education

a. Do you offer any services related to remote education of the systems?

        i. To whom do you offer such services?

       ii. What is included in your offerings?

     iii. What are the best ways of offering remote education services?

     iv. What are the success factors/unique selling point for offering remote education services?

b. Do you receive any services related to remote education of systems?

        i. In what ways do you receive them?

       ii. By whom do you receive them from?

     iii. What is included in the offerings you receive?

     iv. What are the best ways of receiving such services?

      v. What are the success factors/unique selling point for receiving such services?

Semi-structured interview guide - internal resources and capabilities

Date **:**
Time **:**
Name **:**
Department **:**
Occupation **:**
Type of interview **:**

1. What is your role and responsibilities at the case company?
2. What do you see as the case company competitive advantages?
3. Which are the main capabilities within the company enabling these competitive advantages?
4. What specific resources form these capabilities?
5. What is it that the case company competitors are good at that the case company is not?
6. What does the case company need to develop to stay competitive in the future?
7. What is your opinion on the case company starting to generate revenues through services?
   a. What do you think the case company should do?
   b. How do you think the case company should form the service offer?